Vale S.A.
Form 6-K
June 07, 2016
Table of Contents

United States

Securities and Exchange Commission

Washington, D.C. 20549

FORM 6-K

Report of Foreign Private Issuer

Pursuant to Rule 13a-16 or 15d-16

of the

Securities Exchange Act of 1934

For the month of

June 2016

Vale S.A.

Avenida das Américas, No. 700 Bloco 8, Sala 218
22640-100 Rio de Janeiro, RJ, Brazil

(Address of principal executive office)

(Indicate by check mark whether the registrant files or will file annual reports under cover of Form 20-F or Form 40-F.)

(Check One) Form 20-F x Form 40-F o

(Indicate by check mark if the registrant is submitting the Form 6-K in paper as permitted by Regulation S-T Rule 101(b)(1))

(Check One) Yes o No x

(Indicate by check mark if the registrant is submitting the Form 6-K in paper as permitted by Regulation S-T Rule 101(b)(7))

(Check One) Yes o No x

(Indicate by check mark whether the registrant by furnishing the information contained in this Form is also thereby furnishing information to the Commission pursuant to Rule 12g3-2(b) under the Securities Exchange Act of 1934.)

(Check One) Yes o No x

(If Yes is marked, indicate below the file number assigned to the registrant in connection with Rule 12g3-2(b). 82- .)

Table of Contents

Table of Contents:

File 3
Signature Page 737

Table of Contents

1.1. Statement and Identification of the Responsible Individual

Name of the individual responsible for the content of the Reference Form	**Murilo Pinto de Oliveira Ferreira**
Position of responsible individual	Executive Director
Name of the individual responsible for the content of the Reference Form	**Luciano Siani Pires**
Position of responsible individual	Director of Investor Relations

The above-mentioned directors stated that:

a. They have reviewed the Reference Form;

b. All the information contained in the Reference Form complies with Instruction CVM No. 480, in particular with Articles 14 through 19;

c. All the information contained therein is an accurate, precise and complete representation of the economic and financial situation of the issuer and of the risks inherent to its activities and the securities issued by it.

Table of Contents

STATEMENT BY THE PRESIDENT

FOR PURPOSES OF ITEM 1.1 IN THE REFERENCE FORM

Murilo Pinto de Oliveira Ferreira, Brazilian, married, business administrator, bearer of ID card RG IFP/RJ 004.922.272-2, registered with the Taxpayers Registry of the Ministry of Finance under CPF/MF no. 212.466.706-82, resident and domiciled in the City and State of Rio de Janeiro, with business address at Avenida das Américas, no. 700, Bloco 8, Loja 318, 3rd floor, Barra da Tijuca, CEP 22640-100, in the City and State of Rio de Janeiro, as President of **Vale S.A.**, joint-stock company, with registered office at in the city and state of Rio de Janeiro, at Avenida das Américas, no. 700 , Bloco 8, Loja 318, 3rd floor, Barra da Tijuca, CEP 22640-100, registered with the Taxpayers Registry of the Ministry of Finance under CNPJ/MF no. 33.592.510/0001-54 (Company), for purposes of item 1.1 in this Reference Form states that:

a. he has reviewed the Reference Form of the Company;

b. information in this Reference Form complies with the terms in the Instruction by Comissão de Valores Mobiliários no. 480, dated December 7, 2009, as amended specially to Articles 14 to 19; and

c. the information contained herein is a true, accurate, and comprehensive picture of the financial status of the Company and risks inherent to its activities and securities issued by the Company.

Murilo Pinto de Oliveira Ferreira
President

Table of Contents

STATEMENT BY THE EXECUTIVE OFFICER OF FINANCE AND INVESTORS RELATIONS

FOR PURPOSES OF ITEM 1.1 IN THE REFERENCE FORM

Luciano Siani Pires, Brazilian, married, mechanic engineer, bearer of ID card RG IFP/RJ 07.670.915-3, registered with the Taxpayers Registry of the Ministry of Finance under CPF/MF no. 013.907.897-56, resident and domiciled in the City and State of Rio de Janeiro, with business address at Avenida das Américas, no. 700, Bloco 8, Loja 318, 3rd floor, Barra da Tijuca, CEP 22640-100, in the City and State of Rio de Janeiro, as Executive Officer of Finance and Investor Relations of **Vale S.A.**, joint-stock company, with registered office at in the City and State of Rio de Janeiro, at Avenida das Américas, no. 700 , Bloco 8, Loja 318, 3rd floor, Barra da Tijuca, CEP 22640-100, registered with the Taxpayers Registry of the Ministry of Finance under CNPJ/MF no. 33.592.510/0001-54 (Company), for purposes of item 1.1 in this Reference Form states that:

a. he has reviewed the Reference Form of the Company;

b. information in this Reference Form complies with the terms in the Instruction by Comissão de Valores Mobiliários no. 480, dated December 7, 2009, as amended specially to Articles 14 to 19; and

c. the information contained herein is a true, accurate, and comprehensive picture of the financial status of the Company and risks inherent to its activities and securities issued by the Company.

Luciano Siani Pires
Executive Officer of Finance and Investor Relations

Table of Contents

2.1/2.2 Identification and remuneration of Auditors:

Does it have auditor?	YES
CVM (Securities Commission) Code	418.9
Type of Auditor	Domestic
Name/Corporate name	KPMG Auditores Independentes
CPF/CNPJ	57.755.217/0001.29
Service start date:	04/30/2014
End of service provision:	Ongoing.
Description of the service contracted	Provision of professional services associated with (i) auditing financial statements for domestic and international purposes and to develop certification of internal controls (in compliance with Section 404 of Sarbanes-Oxley Act from 2002) for the fiscal years ending on December 31, 2014, 2015, and 2016, and for reviewing the quarterly information ITR from June 30, 2014 to March 31, 2017. Additionally, the scope of the work should also include providing auditing services, such as the issue of procedural reports previously agreed upon according to NBC TSC4400.
Total amount of the remuneration of independent auditors itemized per service	The services hired from the Company s external auditors relative to the fiscal year that ended on December 31, 2015 for the Company and its controlled companies were the following.

	Reais (Thousands)
Financial Audit	19,458
Sarbanes Oxley Act Audit	1,133
Audit-Related Services (*)	174
External Audit Total Services	20,765
Total Services Amount	**20,765**

(*) In their great majority, these services are hired for periods shorter than one year and they are mainly associated with the issue of procedural reports previously agreed upon according to NBC TSC4400).

Justification for replacement	Not applicable
Reason submitted by the auditor in case of disagreement of the issuer justification	Not applicable

Name of the supervisor responsible	**Period of provision of service**	**CPF**	**Address**
Manuel Fernandes Rodrigues de Sousa	Starting on 04/30/2014	783.840.017-15	Av. Almirante Barroso, 52 4º andar 20031-000, Rio de Janeiro, RJ email: mfernandes@kpmg.com.br Telephone: (21) 3515-9336

Does it have auditor?	YES
CVM (Securities Commission) Code	287-9
Type of Auditor	Domestic
Name/Corporate name	PricewaterhouseCoopers Auditores Independentes
CPF/CNPJ	61.562.112/0002-01
Service start date:	07/24/2009

End of service provision: 04/29/2014

Table of Contents

Description of the service contracted	Provision of professional services related to (i) auditing the individual and consolidated financial statements for fiscal years ending on December 31, 2009, 2010, 2011, 2012 and 2013 and reviewing the quarterly information ITR for such fiscal years and the quarter ending on March 31, 2014, both for domestic and international purposes, as applicable, (ii) issuing comfort letters for the issuance of debts and equities at the Brazilian and international market, (iii) the certification of internal controls in order to comply with Section 404 of the Sarbanes-Oxley Act of 2002, and (iv) provision of other services related to the audit and (v) provision of other services, unrelated to the external audit.
Total amount of the remuneration of independent auditors itemized per service	In the fiscal year ended December 31, 2014, no payments were made.
Justification for replacement	Change of Independent Auditors according to article 31 in CVM Instruction 308/99
Reason submitted by the auditor in case of disagreement of the issuer justification	Auditor replacement was expressly approved by the auditor, with no disagreements

Name of the supervisor responsible	Period of provision of service	CPF	Address
João César de Oliveira Lima Junior	06/01/2012 to 04/29/2014	744.808.477-15	Avenida José da Silva de Azevedo Neto nº 200 Bloco 3 - Torre Evolution IV rooms 101, 103 to 108 and 201 to 208, Barra da Tijuca, City and State do Rio de Janeiro-RJ, CEP 22075-556. e-mail: joao.c.lima@br.pwc.com Phone: (21) 3232-6112
Marcos Donizete Panassol	07/24/2009 to 05/31/2012	063.702.238-67	Avenida José da Silva de Azevedo Neto, no. 200, Bloco 3, Torre Evolution IV, salas 101, 103 a 108 e 201 a 208, Barra da Tijuca, Rio de Janeiro, RJ, CEP 22075-556 Email: marcos.panassol@br.pwc.com Telephone: (21) 3232-6112

2.3 Other relevant information

At the meeting of November 28, 2013, the Board of Directors of Vale approved hiring the company KPMG Auditores Independentes to provide auditing services for the Company s financial statements for 3 (three) years starting in fiscal year 2014. Services started with the review of the 2014-second quarter information (ITRs).

The Company has specific internal procedures for pre-approval of engagements for their external auditors in order to avoid conflict of interest or loss of objectivity by its independent auditors.

Table of Contents

The Company s policies regarding independent auditors and other services unrelated to external auditing are grounded in principles that safeguard their independence. In line with best corporate governance practices, all services provided by the independent auditors are pre-approved by the Supervisory Board, and the independent auditor provide us with an independence letter.

Additionally, the Company clarifies that there are no relevant transfers of services or resources between Company-related parties with the Company as defined in CVM deliberation no. 642/10 that approved CPC Technical Pronunciation 05(R1).

3.1 Consolidated Financial Information

(Reais)	Fiscal Year (12/31/2015)	Fiscal Year (12/31/2014)	Fiscal year (12/31/2013)
Shareholders equity	139,419,000,000.00	149,601,000,000.00	152,121,066,000.00
Total Assets	345,547,000,000.00	309,415,000,000.00	291,880,311,000.00
Realized Net Revenue/Temporary	85,499,000,000.00	88,275,000,000.00	101,489,747,000.00
Revenue/Insurance Premium			
Gross Result	16,841,000,000.00	29,188,000,000.00	48,979,108,000.00
Net Result	45,997,000,000.00	219,000,000.00	258,000,000.00
Number of Shares, excluding treasury	5,153,374,926	5,135,374,926	5,153,374,926
Asset Value of Share (in R$/unit)	27.05392136	29.02971395	29.51872670
Basic Earnings per Share	(8.580000)	0.190000	0.020000
Earning Diluted per Share	(8.580000)	0. 190000	0.020000

Table of Contents

3.2 Non-Accounting measurements

a. Value of non-accounting measurements

The Company uses EBITDA and Adjusted EBITDA as a non-accounting measurement. In 2015, 2014, and 2013 , respectively, the EBITDA of the Company was established in the amount of R$ (14,849) million, R$ 27,680 million, and R$ 42,386 million, respectively, while the Adjusted EBITDA was established in the amount of R$ 23,654 million, R$ 31,134 million, and R$ 49,027 million, respectively.

b. Reconciliations between amounts reported and the values of audited financial statements

	Year ending on December 31		
In R$ million	**2015**	**2014**	**2013**
Fiscal year net profit (loss)	(45,997)	219	(258)
Income tax and social contribution	(18,879)	2,600	15,249
Net financial results	36,538	14,753	18,442
EBIT	**(28,338)**	**17,572**	**33,433**
Depreciation, amortization and, depletion	13,489	10,108	8,953
EBITDA	**14,849**	**27,680**	**42,386**
Corporate income in joint ventures and affiliates	1,507)	1,141	999
Reduction of corporate recoverable value in assets	34,553	2,713	5,390
Reduction of corporate recoverable value in joint ventures and affiliates	1,727	71	
Result from the sale of interest in *joint venture* and affiliates	(296)	68	(98)
(Gain) Loss non-current asset impairment kept for sale	(52)	441	508
Dividends received	1,064	1,302	1,836
Discontinued operations			4
Adjusted EBITDA	23,654	31,134	49,027
Dividends received	(1,064)	(1,302)	(1,836)
Depreciation, amortization, and depletion	(13,489)	(10,108)	(8,953)
Adjusted EBIT	**9,101**	**19,724**	**38,238**

c. Why the Company believes that this measurement is more appropriate for a correct understanding of its financial situation and results of operations

EBITDA (LAJIDA) is a measure of the company s cash generation, aiming to assist the assessment by the Administration of the performance of operations. The analysis of operating results through EBITDA (LAJIDA) has the benefit of canceling the effect of non-operating gains or losses generated by financial transactions or the effect of taxes.

We calculate the EBIDTA (LAJIDA) according to the terms set forth in CMV Instruction no. 527, from October 4, 2012 (CVM Instruction 527), as follows: the term s net results, plus the taxes over the profit, of the net financial expenses, of financial revenues, and of depreciation, amortization, and exhaustion.

We also calculate the Adjusted EBITDA (LAJIDA) according to the EBITDA (LAJIDA) adding up to it dividends received from affiliates and joint ventures and excluding depreciation, depletion and amortization, reduction in the recoverable asset of values, burdensome contracts and results from calculations or sale of non-current assets. We

Table of Contents

understand that the Adjusted EBITDA (LAJIDA) has a more precise measure of cash generation in the Company, since it excludes non-recurring and non-cash effects.

The consolidated cash generation measured by EBITDA (LAJIDA) and Adjusted EBITDA (LAJIDA) is not a measure recognized by BR GAAP or IFRS and does not represent cash flow for the periods presented and therefore should not be considered as an alternative to net income (loss), as an isolated indicator of operating performance or as an alternative to cash flow or as a source of liquidity. The EBITDA (LAJIDA) definition used by Vale may not be comparable with EBITDA (LAJIDA) disclosed by other companies, should they not adopt the standard meaning for EBITDA (LAJIDA) determined by CVM Instruction 527.

Table of Contents

3.3 Events subsequent to the latest financial statements

The Company does not provide guidance in the form of quantitative predictions about its future financial performance. The Company seeks to disseminate as much information about its vision of the various markets where it operates, guidelines, and implementation strategies in order to provide investors in the capital markets a basis for the formation of expectations about its performance in the medium and long term.

The Company Consolidated Financial Statements for the year ended December 31, 2015 were issued on February 24, 2016.

The following events, subsequent to the Consolidated Financial Statements of the Company, under the terms in the rules in IAS 24, approved by CVMº 593/09, were observed:

- In January 2016, Vale reported that, in order to meet the provisions of its shareholder compensation policy and as a result of the mineral commodities volatility, the Executive Board had approved and submitted to the Administrative Board a proposal for a minimum compensation equal to zero for the year of 2016. When the scenario becomes better defined and if there is enough cash generation, the Administrative Board may decide to distribute compensation to the shareholders. For further information on the referred policy, see item 3.9 below.

- In January 2016, the Company withdrew US$ 3,000 million from its revolving credit lines. Vale International S.A. withdrew the sum of US$ 1,800 million and Vale S.A. withdrew US$ 1,200 million (R$ 4,686 million).

Such event shall lead to an increase in the Company s debt in the amount of US$ 3,000 million in the 2016 fiscal year. The purpose of this measure was to increase the Company s liquidity and cover potential cash flow short term needs. Part of the amount raised was used to cover funds employed to amortize bonds that matured in the first quarter of 2016. This strategy is consistent with the Company s focus on managing its liquidity and reducing capital cost.

Table of Contents

3.4 Policy for allocation of results

	Fiscal Year Ended December 31		
	2015	2014	2013
a. Rules on retention of profits	According to Article 43 of the Bylaws, there should be a consideration in the proposal for distribution of profits of the formation of (i) fiscal benefit reserve, to be constituted in the form of current legislation, and (ii) investment reserve for the purpose of ensuring the maintenance and development of activities that constitute the main object of the Company, in an amount not exceeding 50% (fifty percent) of net income distributable up to the maximum capital of the Company.		
Values on retention of profits	There was a net loss in the amount of R$ 44,212,186,731.00, and said loss was absorbed pursuant to the terms of the sole paragraph of Article 189 from Act # 6,404/1976. Therefore, no profit was obtained in the fiscal year ended on December 31, 2015.	Of the total of R$ 954,384,414.00, the distribution was (i) R$ 47,719,220.70 to legal reserve and (ii) R$ 161,770,077.08 (17%) to fiscal benefit reserves.	Of the total of 115,090,671.19, added with accrued gains from the adoption of new accounting principles issued by the Comissão de Valores Mobiliários (CVM) and the Comitê de Pronunciamentos Contábeis (CPC), in the amount of R$ 14,627,000.00, the distribution was (i) R$ 485,883.56 to legal reserves and (ii) R$ 24,161,826.66 (21%) to fiscal incentive reserves. (1)
b. Arrangements for distribution of dividends	According to Article 44 of the bylaws, at least 25% (twenty five percent) of annual net profits, adjusted according to the law, will be provided for the payment of dividends. Pursuant to Art. 5, §5 of the bylaws, the holders of preferred shares of Class A and special class, shall have their right to participate in the dividend to be distributed and calculated as per Chapter VII of the Bylaws, according to the following criterion: (a) Priority in the reception of dividends corresponding to (i) 3% (three per cent) at least of the net asset value of the share, calculated based on the financial statements analyzed that served as reference for the payment of dividends or (ii) 6% (six per cent) calculated on the part of the capital to which that class of share belongs, whichever is the greatest of these.		

	(b) Right to participate in the distributed incomes, under equal conditions with common shares, after them, guaranteeing a dividend equal to the priority minimum set up pursuant to a above. (c) the right to receive eventual dividends, under equal conditions with ordinary shares, complying with the priority established for dividend distribution.		
c. Frequency of dividend distribution	In accordance with the practices adopted by the Company, dividend	In accordance with the practices adopted by the Company, dividend	In accordance with the practices adopted by the Company, dividend

Table of Contents

	payments made in the fiscal year ended on December 31, 2015, were made semiannually in the months of April and October. It should be noted that the shareholder compensation policy was amended in the Ordinate and Extraordinary General Assembly held on April 25, 2016. For further information on the referred policy, please see item 3.9 below.	payments made in the fiscal year ended on December 31, 201, were made semiannually in the months of April and October.	payments made in the fiscal year ended on December 31, 2013, were made semiannually in the months of April and October.
d. Eventual restrictions to dividend distribution imposed by legislation or special regulation applicable to the Company, as well as contracts, judicial, administrative, or arbitral decisions	none	none	none

Table of Contents

3.5 Distributions of dividends and retention of net income.

(Reais)	Fiscal Year Ended December 31, 2015	Fiscal Year Ended December 31, 2014	Fiscal Year Ended December 31, 2013
Adjusted net income for dividend payments	0.00000	744,895,116.22	99,069,960.97
Percentage of dividend over the adjusted net profit	0.00000	100.00000	100.000000
Rate of return in relation to equity	0.00000	0.63795	0.10000
Dividend distributed	0.00000	9,738,750,000.00	9,319,275,000.00
Net income retained	0.00000	161,770,077.08	24,161,826.66
Date of approval of the retention	04/25/2016	04/17/2015	04/17/2014

01/01/2015 to 12/31/2015

Share Type	Share Class	Distributed Dividend	Amount (Unit)	Dividend Payment
Common		Interest on Capital	1,917,001,706.26	04/30/2015
Preferred	Preferred Class A	Interest on Capital	1,184,098,296.20	04/30/2015
Common		Mandatory Dividend	1,190,190,329.63	10/30/2015
Preferred	Preferred Class A	Mandatory Dividend	735,159,669.85	10/30/2015

01/01/2014 to 12/31/2014

Share Type	Share Class	Distributed Dividend	Amount (Unit)	Dividend Payment
Common		Interest on Capital	2,863,596,635.71	04/30/2014
Preferred	Preferred Class A	Interest on Capital	1,768,793,364.29	04/30/2014
Common		Mandatory Dividend	1,083,253,396.32	10/31/2014
Preferred	Preferred Class A	Mandatory Dividend	669,106,603.68	10/31/2014
Common		Interest on Capital	2,073,336,466.96	10/31/2014
Preferred	Preferred Class A	Interest on Capital	1,280,663,533.04	10/31/2014

Table of Contents

01/01/2013 to 12/31/2013

Share Type	Share Class	Distributed Dividend	Amount (Unit)	Dividend Payment
Common		Interest on Capital	2,263,206,859.28	04/30/2013
Preferred	Preferred Class A	Interest on Capital	1,397,943,140.72	04/30/2013
Common		Mandatory Dividend	489,342,023.63	04/30/2013
Preferred	Preferred Class A	Mandatory Dividend	302,257,976.37	04/30/2013
Common		Interest on Capital	2,624,124,419.28	10/31/2013
Preferred	Preferred Class A	Interest on Capital	1,620,875,580.72	10/31/2013
Common		Mandatory Dividend	384,207,050.57	10/31/2013
Preferred	Preferred Class A	Mandatory Dividend	237,317,949.43	10/31/2013

Table of Contents

3.6 Statement of Dividends on account of retained earnings or reserves

	Fiscal Year Ended December 31		
Dividends distributed to (in R$ thousands):	**2015**	**2014**	**2013**
Retained Earnings			
Reserves Realization	5,026,450	8,993,855	9,220,205

Table of Contents

3.7 Debt

Fiscal year	Sum of current and non-current assets	Type of index	Debt Index	Description and reason for the use of another index of indebtedness
12/31/2015	R$ 206,128,000,000.00	Debt ratio	1.6	
12/31/2015		Other indexes	4.1	Gross adjusted debt/EBITDA. Gross debt is the sum of Loans and short-term debt, Portion of the stock of long-term loans and Loans and long-term financing. The adjusted EBITDA (EBITDA) is calculated as described in section 3.2.b of this reference form, converted to annual bases ADJUSTED EBITDA The debt ratio Gross Debt / Adjusted EBITDA shows the approximate time necessary for a company to pay all its debt with its cash flow. The Company adopts the debt ratio gross debt / Adjusted EBITDA and interest coverage ratio Adjusted EBITDA / Interest expenses. These indexes are widely used by the market (rating agencies and financial institutions) and serve as a benchmark to assess the financial situation of the Company.
12/31/2015		Other indices	4.3	Adjusted EBITDA / Interest expenses The adjusted EBIDTA is calculated as described in item 3.2.b of this Reference form, excluding non-recurrent items. Interest expenses include the sum of all appropriated or adjusted interests, paid or not, at certain times, that result from Company debt. The interest coverage index (Adjusted EBITDA / Interest Expenses) is used to determine a company s cash flow capacity that is sufficient to cover payment on interest expenses The Company adopts the Gross debt/ adjusted EBIDTA debt rate and the adjusted EBIDTA/interest expenses interest coverage rate. These indices are widely used by the market (rating agencies and financial institutions) and they are a baseline to which to compare Vale s financial status.

Table of Contents

3.8 Obligations according to the nature and maturity date:

			Last accounting information (12/31/2015)				
Type of obligation	**Type of Warranty**	**Other Warranties and Privileges**	**Less than 1 year (R$)**	**Between 1 and 3 years (R$)**	**Between 3 and 5 years (R$)**	**Over 5 years (R$)**	**Total (R$)**
Loans	Other Warranties	Unsecure and Guarantees					
		See field	10,291,637,900.68	26,216,330,808.17	25,224,075,074.94	50,934,640,925.59	112,666,684,709.38
Financing	Unsecured obligations		30,474,362,099.32	16,246,669,191.83	2,898,924,925.06	43,841,359,074.1	93,461,315,290.62
Total			**40,766,000,000.00**	**42,463,000,000.00**	**28,123,000,000.00**	**94,776,000,000.00**	**206,128,000,000.00**

Note: Information in this item refers to the Company s consolidated financial results.

The value shown in items 3.7 and 3.8 represents total of the obligations based on the addition of the outstanding and non-outstanding liabilities. Debts that lack collaterals or floating guarantees, whether or not they have personal guarantees, have been classified as unsecured obligations. Debts guaranteed with third party assets, as they do not encumber Company assets, were deemed as non-guaranteed debts and are classified as such.

The Financing filed refers mainly to Suppliers, amount to the paid to employees, taxes and provisions owed, among which are the retirement of assets and contingencies.

Additionally, due to system restriction, please note that the field Loans , corresponding to R$ 112.7 billion, on December 31, 2015 was made up of (i) debt bonds corresponding to R$ 60.4 billion, noting that said debt bonds were unsecured and, (ii) loans, corresponding to R$ 52.3 billion, noting that from the referred total loan amount, R$ 1.9 billion are relative to loans backed by guarantees and the remaining amount of R$ 50.4 billion are relative to unsecured guarantees.

Table of Contents

3.9 Other information that the Company deems relevant

Additional Information on Financing Contracts

Part of the financial contracts entered by the Company, as well as the securities representing the circulating debt issued by the Company (for more information on such securities, see item 18.5 of this Reference Form) have clauses specifying advances maturity of pending amounts for the event of cross acceleration from other financial contract signed with the same party and/or other financial contracts.

Additional Information on Dividend Distribution

Vale calculated the net loss to be equal to R$ 44,212 million in the fiscal year ended on December 31, 2015, and said loss was absorbed pursuant to the terms of the sole paragraph of article 189 of Act # 6.404/1976. Therefore, dividend distribution was not approved in the Ordinary General Assembly that was held on April 25, 2016.

It should be pointed out that dividends and interest on capital distributed by the Company according to item 3.6 above were distributed based on accrued profit reserves approved in the social accounting relative to fiscal year 2014. Taking into consideration said reserves, the Administrative Board in meeting held on (a) April 14, 2015, approves the payment, starting on April 30, 2015, of the first payment of minimum compensation to Vale shareholders relative to 2015, in the total gross amount of R$ 3,101,100,000.00, as interest on capital, corresponding to the total gross amount of R$ 0,601760991 per current, ordinary or preferential share issued by Vale, and this amount was subject to withholding tax; (b) on October 15, 2015, the payment, starting on October 30, 2015, of the second payment of shareholders compensation relative to 2015, as dividends, in the total gross amount of R$ 1,925,350,000.00, corresponding to the amount of R$ 0.3736095333 per current, ordinary or preferential share issued by Vale.

Additionally, the Company clarifies that the shareholder compensation policy was amended in the Extraordinary and Ordinary General Assembly help on April 25, 2016. According to the policy provisions approves:

- Shareholder compensation shall fall under the Administrative Board s discretion. The Board shall deliberate on the amount to be distributed based on the Company s business context and taking into consideration, among other factors, leverage levels and the Company s future cash commitments.

- Shareholder compensation shall fall under the Administrative Board s discretion, and said Board shall deliberate on payment in two occasions. The first payment (initial payment) shall be analyzed and, if applicable, shall be paid in the month of October of the current year, and the second payment (complementary payment) shall be analyzed and, if applicable, shall be paid in the month of April of the following year. The amount of the first payment shall be determined based on the results the Company accrued in the period and on the estimated free cash flow

generation for the following year. The second payment shall be determined after the fiscal year results are calculated.

- Proposal of the first payment of shareholders compensation shall be submitted by the Executive Board for deliberation by the Administrative Board in the month of October of each year, and it shall be disclosed to the market as soon as it is approved. The second payment of shareholders compensation shall be part of the net profit disposition of the fiscal year, and it shall be submitted by the Executive Board to the Administrative Board within the first quarter of the following year. The amount relative to the second payment shall be disclosed to the market after it is approved by the Administrative Board, and its payment shall be contingent on approval in Ordinary General Assembly.

- The amount of the first payment of shareholders compensation shall be expressed in American dollars, and payment shall be made as dividends and / or interest on capital. The amount determined as payment shall be paid in national currency, and the conversion of the amount proposed in American dollars to Reais shall be made based on the sale exchange rate of the American dollar (Ptax-option 5), published by the Brazilian Central Bank (BACEN) on the business day preceding the Administrative Board s meeting that deliberated on the statement and respective payment of shareholder compensation. The amount of the second payment shall be expressed and paid in Reais, and payment may be made in dividends and / or interest on capital. The amount equivalent to American dollars shall be calculated based on the purchase exchange rate of the American dollar (Ptax-option 5), published by the Brazilian Central Bank (BACEN) on the business day preceding the payment.

Table of Contents

- During the year, the Executive Board may present a proposal to the Administrative Board, grounded in the analysis of the evolution of the Company s cash flow and on the availability of profits or reserves of existing profit, for the distribution of additional compensation to the amounts paid in October and April.

4.1 - Description of risk factors

(a) Risks relating to the Company

The Company may not be able to adjust the volume of production in time or cost-effectively in response to changes in demand.

Underuse of Company capacity in periods of low demand may expose the Company to higher production cost per unit since a significant part of its cost structure is fixed in the short term. Thus, any reduction in volume entails a lower dilution of these fixed costs, with a resulting impact on the unit cost of production. Additionally, efforts to reduce costs during periods of low demand may be limited by labor legislation or previous labor or government agreements.

On the other hand, in periods of high demand, Vale s capacity to rapidly increase production is limited, which may make it impossible to meet the demand for its products. Moreover, the Company may be unable to complete expansions and new Greenfield projects in time to take advantage of the increasing demand for iron ore, nickel and other products. When demand exceeds its production capacity, the Company may meet excess demand by purchasing iron ore, iron ore pellets or nickel from its joint ventures or third parties and resell them, which would increase its costs and reduce its operating margins. If it is unable to meet its customers increased demand this way, Vale could lose customers. In addition, operating close to full installed capacity may expose the Company to higher costs, including demurrage fees due to capacity limitations in its logistics systems.

Lower cash flows, resulting from Company products price fall, may adversely affect the Company s credit ratings as well as the cost and availability of funding.

A continued drop in the price of Company products plus the volatility of the global economy may negatively affect the Company s future cash flows, credit ratings and its ability to secure financing at attractive rates. Price reductions resulted in lower cash flows, which also negatively affected the credit rating and Vale s financial ability to access capital markets. This may negatively impact the Company s ability to finance its capital investments, pay dividends, and meet covenants listed in some of its long-term debt instruments.

Furthermore, certain Canadian provinces where the Company operates require the provision of financial guarantees by Vale, such as letters of credit, surety or guarantee insurance to cover certain closing costs and recovery after the completion of operations. The Company may be forced to increase the value of these financial guarantees if its credit rating is downgraded to below certain levels. If Vale is unable to provide these financial guarantees, it will have to negotiate other options with the competent jurisdictions and, in the latter case, this could impact the Company s ability to operate in such jurisdictions.

The Company is involved in legal proceedings that may have a substantial negative effect on its businesses is outcomes are unfavorable.

The company is involved in legal proceedings in which the Appellees claim substantial amounts. Such legal procedures include lawsuits and several investigations associated with the collapse of the Fundão tailings dam, owned by Samarco. Although the Company is vigorously contesting these proceedings, outcomes are uncertain and may result in obligations that could rather substantially negatively affect its

Table of Contents

business and the value of its shares. For information on these proceedings, see items 4.3 to 4.7 below.

The Company s projects are subject to risks that may result in increased costs or delay in their implementation.

The Company is investing to maintain and increase its production and logistics capacity, as well as to expand the portfolio of minerals produced. Vale regularly analyses the economic viability of its projects. As a result of this analysis, the Company may decide to postpone, stay, or interrupt the implementation of some of them. Its projects are subject to various risks that may adversely affect its growth and profitability prospects, including:

There may have been delays or costs may be higher than expected in order to obtain the necessary equipment or services and to implement new technologies to build and operate a project.

Its efforts to develop projects according to the schedule may be hampered by the lack of infrastructure, including reliable telecommunication services and power supply.

Suppliers and other corporate contractors may not comply with their contractual obligations to the Company.

The Company may experience unexpected weather conditions or other force majeure events.

The Company may fail to obtain the required permits, authorizations, and licenses for a project, or it may experience delays or have higher than expected costs to obtain them.

Changes in market conditions or legislation may make the project less profitable than expected at the time its operation begins.

There may be accidents or incidents during project implementation.

It may be difficult to find appropriate skilled professionals.

Operational problems may negatively and significantly affect the Company s business and financial performance.

An inefficient project management and operational incidents may lead to the suspension or reduction of the Company s operations, causing an overall decrease of productivity. Operational incidents may result in important failures in essential plant and machinery. There are no guarantees that project management will be efficient or that other operational problems will not occur. Any damage to the Company s projects or delays in its operations caused by inefficient project management or operational incidents may negatively and significantly affect its business and operating results.

Table of Contents

The Company s business is subject to various operational risks that can adversely affect the results of its operations, such as:

Unexpected weather conditions or other force majeure events may occur.

Adverse mining conditions may delay or hinder its ability to produce the expected amount of minerals and to meet the specifications required by customers, which may lead to price reductions.

Table of Contents

There may be accidents or incidents during the business operations, involving its mines, and related infrastructure, such as dams, plants, railways, ports and vessels.

Delays or disruptions in the transportation of its products, including railways, ports and vessels.

Some of its projects are located in regions where tropical diseases, AIDS and other communicable diseases represent a major public health issue and pose risks to the health and safety of its employees.

Labor disputes may disrupt its operations from time to time.

Changes in the market or legislation may affect the economic perspectives of an operation making it incompatible with the Company s business strategy.

Interruptions or unavailability of information technology systems or essential services, which may result from accidents or irregular acts.

The Company s business may be negatively affected if its counterparties fail to meet their obligations.

Customers, suppliers, corporate contractors, financial institutions, and other counterparties may not perform the contracts and obligations assumed before the Company, which may have an adverse impact on the Company s operations and financial results. The ability of its suppliers and customers to meet their obligations may be adversely affected in times of financial stress or economic recession..

The Company currently operates and has projects related to significant parts of its iron ore, pelletizing, bauxite, nickel, coal, copper, fertilizers and steel businesses through joint ventures. Important parts of its investments and projects in electric power are operated through consortia or joint ventures. Its forecasts and plans for these joint ventures and consortia assume that its partners will observe their obligations to make capital contributions, purchase products, management, and, in some cases, provide skilled and competent personnel. If any of its partners fails to observe its commitments, the affected joint venture or consortium may not be able to operate in accordance with its business plans, or the Company may have to increase the level of its investment to implement these plans.

Some of the Company investments can be controlled by partners in joint ventures or they may be managed by a separate and independent management company. These investments may not comply fully with Company procedures, including health, safety, environment, and common rules. Failure to adopt any adequate rules, controls or procedures, by any of the Company partners or joint ventures, may increase costs, reduce production or cause environmental, health or security incidents or accidents, which could adversely affect Company results and reputation.

The Company may not have an adequate insurance coverage for certain business risks.

Table of Contents

The Company s businesses are generally subject to numerous risks and uncertainties that could result in damage or destruction of properties, facilities and equipment. Vale s insurance against risks that are typical in such business may not provide adequate coverage. Risk insurance (including liability for pollution or certain environmental damages or interruptions of certain business activities) may not be

Table of Contents

available at a reasonable cost or at all. Even when it is available, the Company can self-insure by determining that this will have better cost-benefit. As a result, accidents and other negative events involving its mining, production or logistics facilities may have an adverse effect on its operations.

The Company reserve estimates may materially differ from the mineral quantities that it may be able to actually recover; its estimates of mine life may prove inaccurate; and market price fluctuations and changes in operating and capital costs may render certain ore reserves uneconomical to mine.

Company reported reserves correspond to estimated quantities the Company determines to be economically possible to be mined and processed under present and anticipated conditions to extract their mineral content. There are numerous uncertainties inherent in estimating quantities of reserves and in projecting potential future rates of mineral production, including factors beyond Company control. Reserve reporting involves estimating deposits of minerals that cannot be measured in an exact manner, and the accuracy of any reserve estimate is based on the quality of available data and engineering and geological interpretation and judgment. Thus, no assurance can be given that the amount of ore indicated in those reports will be effectively recovered or that it will be recovered at the rates anticipated by the Company. Reserve estimates and estimates of mine life may require revisions based on actual production experience, projects, and other factors. For example, the lower market prices of minerals and metals reduced recovery rates or increased operating and capital costs due to inflation, exchange rates, changes in current regulations or other factors may render proven and probable reserves uneconomical to exploit and may ultimately result in a restatement of reserves. This reformulation can affect the rates of depreciation and amortization and cause a negative impact on the Company s financial performance.

The Company may not be able to replenish its reserves, which could adversely affect its mining prospects.

The Company is engaged in mineral exploration, which is highly uncertain in nature, involves several risks and is many times non-productive. Its exploration programs, which involve significant capital expenditures, may fail to result in the expansion or replenishment of reserves depleted by current production. If the Company fails to develop new reserves, it will not be able to sustain its current level of production beyond the remaining lives of its existing mines.

The feasibility of a new mining project may change over time

Once mineral deposits are discovered, it can take a number of years from the initial phases of drilling until production is possible, during which the economic feasibility of production may change. Substantial time and expenditures are required to:

Determine mineral reserves through drilling;

Determine appropriate mining and metallurgical processes for optimizing the recovery of metal contained in ore;

Obtain environmental and other required licenses;

Table of Contents

Construct the necessary mining and processing facilities and infrastructure required for the development of new projects (greenfield); and

Obtain the ore and extract the minerals from the ore.

Table of Contents

If a project proves not to be economically feasible by the time the Company is able to explore it, the Company may sustain significant losses, and eventually be compelled to reduce such assets. In addition, potential changes or complications involving metallurgical and other technological processes arising during the life of a project may result in delays cost overruns that may render the project not economically feasible.

The Company faces rising extraction costs or investment requirements over time as mineral reserves deplete.

Mineral reserves are progressively reduced in the ordinary course of a mining operation, whether open or underground. As mining progresses, distances to the plant and to waste deposits become longer, pits become steeper, open mines become underground mines, and underground operations become deeper. Additionally, for some types of reserves, the mining content is reduced and hardness increases in greater depths. As a result, over time, the Company usually experiences increase in ore extraction in its operations, or it may be required to make additional investments, including adjustment or construction of processing plants and expansion or construction of disposal barriers, it is likely that the Company needs to increase extraction costs per unit in these operations in the future.

Legal and administrative disputes may affect or disrupt the Company s operations from time to time.

The Company has a substantial number of employees and some subcontractors employees are represented by unions and are subject to collective bargaining agreements or other labor agreements that are subject to periodic negotiation.

Additionally, the Company is subject to periodical and regular investigations by the Ministry of Labor and Employment and the Labor Prosecution Office aiming compliance with labor rules, including those related to labor health and security. These investigations may cause fines and processes that could adversely and materially affect the businesses, the results and financial conditions of the Company.

Strikes and other labor disruptions in any of the Company s activities could adversely affect the operation of its facilities, the completion period and the cost of main projects. For more information on labor relations, see item 14 of this Reference Form. Moreover, we may be adversely affected by work stoppages involving third parties that may provide goods or services to the Company.

Higher costs with energy or energy shortages may adversely affect the Company s business.

Energy costs (fuel oil, natural gas, and electricity) are a significant component of the Company s production cost, representing 9.1% of the total cost of goods sold in 2015. To meet its energy demand, the Company depends on the following resources: Oil byproducts (accounting for 43% of all energy needs in 2015, electricity (26%), natural gas (16%), coal (13%), and other sources of energy (2%),

Expenses with electricity accounted for 2.48% of its total cost of goods sold in 2015. If the Company cannot ensure access to electricity at affordable prices, it may be forced to reduce production or may experience higher production costs, both of which can adversely affect its operating results. The Company faces the risk of energy shortages in countries where it

Table of Contents

has operations and projects, especially in Brazil, due to a lack of infrastructure or adverse weather conditions such as floods or droughts.

Table of Contents

Future shortages and government efforts to respond to or prevent electricity shortages may have a negative impact on the cost or supply of electricity to the Company s operations.

Failures on Company information technology systems or difficulties in the integration of new corporate resources planning software may affect regular businesses of the Company.

The Company counts on information technology systems (IT) for the operation of many of its business processes. Failures to such IT systems may, whether caused by accident or ill-intended acts, may cause disclosure or robbery of sensitive information, resource deviation and interruption to commercial operations.

Company s governance processes and compliance with its obligations may fail to avoid regulatory fines and damages to its reputation.

The Company operates in a global environment and its activities extend across multiple jurisdictions and complex regulatory structures with an increase in its legal obligations around the world. Its governance process and compliance with obligations, which include the identification and mitigation of risks through internal controls focused in the information published in their own financial reports, may not be able to avoid future violations of the law and accounting and governance standards. The Company may be subject to violations of its Code of Ethics and Conduct, anticorruption policies, business conduct protocols and fraudulent and dishonest behavior by its employees, contractors and other agents. Failure by the Company to comply with applicable laws and other rules can result in fines, loss of operating licenses and damages to its reputation.

Investors may find it difficult to comply with any judgment rendered outside Brazil against the Company or any of its affiliates.

Company investors can be located in jurisdictions outside Brazil and may file claims against the Company or management members with courts within their jurisdictions. The company is a Brazilian company and nearly all of its executive officers and members of the Board of Directors are Brazilian residents. Most of Company s assets and the assets of its executive officers and members of the Board of Directors will be probably located in jurisdictions other than the jurisdictions of its investors. The investors, in their jurisdictions, may not be able to serve notices against the Company or its manager s resident outside their jurisdictions. Additionally, a foreign decision may be enforced in Brazilian courts, without a new analysis on merits provided that it is previously confirmed by the Brazilian Superior Court of Justice, which confirmation will be granted as long as such judgment: (a) meets all the formal requirements to be enforced pursuant to the legislation in force in the country where it was rendered; (b) has been rendered by a competent court after due process against the company, pursuant to the legislation in force; (c) has been authenticated by the Brazilian consulate in the country where it was rendered and is accompanied by a sworn translation into Portuguese; and (d) is not contrary to the sovereignty of Brazil, its public policy or morality. Therefore, investors may not obtain favorable decisions outside their jurisdictions in judicial processes filed against the Company or its managers passed by courts in their jurisdictions with decisions on the basis of the legislation in force in those jurisdictions.

(b) Risks relating to Company s controlling shareholder or parent group and (c) Risks related to Company shareholders.

Table of Contents

The Company s controlling shareholder exerts significant influence over Vale and the Brazilian government holds certain veto rights.

On February 29, 2016, Valepar S.A. (Valepar) held 53.9% of the common shares and 33.7% of the Company s total capital. Because of its stock ownership, Valepar may elect the majority of members of the Board of Directors and can control the outcome of some actions requiring shareholder approval. For a description of the Company s ownership structure and of Valepar shareholders agreement, see item 15 of this Reference Form.

The Brazilian government owns 12 special class preferred shares (golden shares) of Vale, granting limited veto power over certain matters regarding the Company, such as changes of corporate name, location of main office and corporate purpose related to mining exploration. For a detailed description on the veto power of golden shares, see item 18.1 in the Reference Form.

(d) Risks relating to Company s subsidiary companies.

For further information on the risks relating to the companies in which the Company invests, see the section Risk Factors described in item (a) above: The Company s business may be negatively affected if the counterparts fail to meet their obligations .

(e) Risks relating to Company suppliers

For further information about risks relating to Company suppliers, please see Risk Factors described in item (a) above: The Company face shortages of equipment, services and skilled personnel . The higher energy cost or lack of energy could adversely affect Company business and The Company s business may be negatively affected if the counterparts do not meet their obligation .

(f) Risks relating to Company customers

Company business could be adversely affected by demand and price reduction for products manufactured by its customers, including steel (for iron ore and coal operations), stainless steel (for nickel operations), copper wire (for copper operations) and agricultural commodities (for fertilizer operations).

The demand for iron ore, metallurgical coal and nickel depends on global demand for steel. Iron ore and pellets, which together accounted for 62% of Company net operating revenues in 2015 are used in the production of carbon steel. Base metals, which accounted for 18% of Company net operating revenues in 2015 are mainly used to produce stainless and alloy steels. Demand for steel depends heavily on global economic conditions as well as on a series of regional and sectorial factors. The prices of the different types of steel and the performance of the global steel industry are highly cyclical and volatile and these business cycles in the steel industry affect the demand for and the prices of its products. Besides, the vertical integration of the steel and stainless steel industry and the use of scrap could reduce the global transoceanic trade of iron ore

and primary nickel. The demand for copper is affected by the demand for copper wire and a

Table of Contents

sustained decline in the demand in the construction industry could have an adverse impact on Company copper businesses. The demand for fertilizer is affected by agricultural commodities prices in the international and domestic markets, and a sustained decline in the price of one or more agricultural commodities may cause an adverse impact on the Company s fertilizer business.

For further information about risks relating to Company clients, please see Risk Factors described in item (a) above: and The Company s business may be negatively affected if the counterparts do not meet their obligation .

(g) Risks relating to the fields of economy in which the Company operates

The mining sector is highly exposed to the cyclicality of global economic activities and requires significant capital investments.

The mining sector is primarily a supplier of industrial raw material. Industrial production tends to be the most cyclical and volatile component of global economic activities, affecting the demand for minerals and metals. At the same time, investment in mining requires a substantial amount of resources, in order to replenish and maintain the reserves, expand the production capacity, build infrastructure and preserve the environment. The sensitivity to the industrial production, along with the need for significant long-term capital investments, are important sources of risks to the financial performance and growth prospects of Vale.

Economic developments in China may cause a negative impact on the Company s revenue, cash flow and profitability.

China has been the main driver of global demand for minerals and metals in recent years. In 2015, Chinese demand represented 69% of global transoceanic demand for iron ore, 51% of global demand for nickel, and 46% of the global demand for copper. The percentage of the Company s net operating revenues attributable to sales to consumers in China was 36% in 2015. Therefore, any contraction in China s economic growth may result in reduction on the demand for products, leading to lower revenues, cash flow and profitability. Poor performance of the Chinese real estate sector, the highest consumer of carbon steel in China, may have a negative impact on the Company s results.

(h) Risks relating to the regulation of the sectors in which the Company operates

Regulatory, political, economic and social conditions in the countries in which the Company has operations or projects could adversely affect its business and the market prices of its securities.

Vale s financial performance may be negatively affected by regulatory, political, economic and social conditions in the countries where the Company has significant operation. In many of these locations, Vale is open to risks, such as potential renegotiations, annulments or changes imposed by existing contracts and licenses, property expropriation or nationalization, currency exchange, changes in legislation, local regulations and policies, political instability, bribery, extortion, corruption, civil war, acts of war, guerrilla activities, piracy in international

transportation routes, and terrorism.

Table of Contents

The Company also faces the risk of having to submit to foreign jurisdiction or arbitration or to be forced to execute a court order against a sovereign nation within its own territory.

Actual or potential political or social changes and changes in economic policy may undermine investors confidence which could hamper investments and therefore reduce still negatively affect economic and other conditions under which the Company operates, so as to adversely affect its business.

Disagreements with local communities where the Company operates may have a negative impact on its business and reputation.

Legal disputes with communities where the Company operates may appear. In some cases, the Company s operations and mineral reserves are located on lands or near lands owned or used by indigenous or people, or other groups of stakeholders. Some of these indigenous populations may have rights to review or participate in the management of natural resources.

Table of Contents

Some Company mining operations and other operations are located in territories where property may be subject to disputes or uncertainties, or in areas destined to be used for agriculture, traditional collection, or for purposes of agrarian reform, which may cause disputes with land owners, communities and local government. The Company may be required to consult with these groups and negotiate them as part of the process to obtain the required mining licenses, to minimize the impact on its operations or to obtain access to its lands.

Disagreements or disputes with local groups, including indigenous, may cause delays or interruptions in operations, adversely affect the Company s reputation or hinder its ability to work in mineral reserves and conduct its operations. Protesters have acted in the past to disrupt Company operations and projects and may continue to do so in future, which may harm Company operations and negatively affect its business. Because the Company is one of Samarco s shareholders, its reputation, particularly in the communities affected by the collapse of Samarco s tailings dam in 2015, was negatively affected. For further information on the collapse of Samarco s dam, please see items 4, 7.9, and 10.1 of this Reference Form.

The Company may experience adverse effects of changes in government policies or trends such as the nationalization of funds, including the imposition of new taxes or royalties on mining activities.

Mining is subject to government regulation in the form of specific taxes, fees and other contributions, as royalties on mining activities, which can have a significant impact on Company operations. In the countries where the Company operates, governments may impose existing taxes, fees or different contributions, or increase the existing rates for taxes, fees and different contributions, including royalties, reduce fiscal exemptions and benefits, solicit, or yet, compel renegotiation of fiscal stabilization agreements or, also, modify the basis on which they are calculated, in a manner unfavorable to the Company. Governments that have undertaken to create a stable tax and regulatory environment may shorten the duration of these commitments.

It is also possible that the Company must comply with internal benefit requirements in some countries, such as processing rules, import taxes, or restrictions, or fees on transformed ore, in all cases, at the operation site. Imposition or increase of such taxes or fees may significantly increase the risk profile and operational cost in these locations. The Company and the mining industry are subject to an increased nationalization trend related to mineral resources in certain countries where it operates, which may cause reductions in operations, tax increases or even expropriation and nationalization.

Concessions, authorizations, licenses and permits are subject to expiration, restriction or renewal and to various other risks and uncertainties.

Vale s operations depend on the granting of authorization and concessions by regulatory organizations from the government of countries where Vale works. The Company is subject to the laws and regulations of several jurisdictions, which can change at a moment s notice. Such changes may require changes in Vale s technologies and operations, resulting in unexpected capital expenses.

Some of Vale s mining concessions are subject to fixed expiration dates and can only be renewed for a limited number of times, and for limited periods. In addition to mining concessions, Company may obtain various authorizations, licenses, and permits from government and regulatory agencies regarding the planning, maintenance, operation, and closure of the Company s mines, and its logistics infrastructure, which may be subject to fixed due dates or regular reviews or renewals.

33

Table of Contents

Although the Company expects renewals to be granted when and as requested, there is no guarantee that such renewals will be granted as usual, as well as there is no guarantee that new conditions will not be imposed in this regard. Fees due by mining concessions may substantially increase over time in comparison with the original issuance of each operating license. If that is the case, the cost to obtain or renew mining concessions may prevent the Company from reaching its business goals. Thus, it is necessary to continually assess the mineral potential of each mining concession, especially at the time of renewal, in order to determine if maintenance costs of mining concessions are justified by the expected results of future operations, and thus be able choose whether to keep them. There are no guarantees that such concessions will be granted under terms favorable to the Company, as well as there are no guarantees as to estimate future mining activities or operation goals.

In many jurisdictions where the Company has exploration projects, it may be required to return to the Government a certain portion of the area covered by the operating license as a condition for renewing license or obtaining a mining concession. This retrocession obligation may lead to a substantial loss of part of the mineral deposit originally identified in its feasibility studies. For more information on mining concessions and similar rights, see Mining Activities Regulation in item 7 of this Reference Form.

After the collapse of the tailings dam belonging to Samarco (Fundão) in the State of Minas Gerais, the Brazilian authorities have suspended Samarco s operations in Minas Gerais in addition to taking other measures. For further information on the collapse of the Samarco dam, see items 4, 7.9, and 10.1 of this Reference Form.

(i) Risks relating to Company s ADSs and HDSs (American Depositary Shares and Hong Kong Depositary Shares)

If holders of ADSs or HDSs exchange the ADSs or HDSs, respectively, for underlying shares relative to them, they risk losing the ability to remit abroad funds corresponding to the sale in foreign currency.

The custodian of shares referenced in the Company s ADSs and HDSs keeps records with the Central Bank of Brazil, entitling him to remit U.S. Dollars abroad by way of payment of dividends and other distributions relating to the shares referenced in ADSs and HDSs or to the disposal of the referenced shares. In the event holders of ADSs or HDRs exchange ADSs or HDSs for the shares, they shall be entitled to use the custodian s records of US dollars for only five days from the date of exchange. Upon said term, holders of ADSs or HDRs can no longer hold and remit foreign currency abroad through the sale of underlying shares or distributions regarding such shares, unless they obtain their own registration, pursuant to the terms of applicable legislation, which confers on registered foreign investors the right to buy and sell securities at BMF&BOVESPA. If holders of ADSs or HDRs try to obtain a registration, they may incur expenses or suffer delays in the registration process, which may delay the receipt of dividends and other distributions with respect to the shares or capital return in a timely manner.

The Company is unable to assure holders of ADS or HDR that their custodian registration or any registration will not be affected by future changes to the legislation or additional restrictions applicable to holders of ADS or HDR, the disposal of the referenced shares or the repatriation of resources obtained through disposal will not be taxed in the future.

Holders of ADS and HDR may not be able to exercise their pre-emptive rights relating to shares referenced in their ADSs and HDSs.

34

Table of Contents

ADS and HDR may not be able to exercise their preemptive rights or other rights relating to the referenced shares. The ability of HDR and ADS holders to exercise their preemptive rights is not guaranteed, especially if the law applicable in holders jurisdiction (for example, the Securities Act in the United States or the Companies Ordinance in Hong Kong) demands that a registration declaration be effective or that an exemption from registration be available relating to those rights, as is the case in the United States, or for any document enabling preemptive rights to be registered as a prospectus, as is the case in Hong Kong. The Company is not bound to make a registration statement in the United States, or make any other record with respect to preemptive rights in any other jurisdiction, or to take measures that may be necessary to grant exemptions from available registration and it cannot ensure to holders that it shall make any registration statement or take such measures.

ADS and HDR holders may encounter difficulties to exercise their voting rights.

Holders of ADS or HDR do not have the same rights as shareholders. They only hold contract rights established in their favor under their respective deposit contracts. ADS and HDR holders are not entitled to take part in shareholders meetings and may vote by means of providing due instructions to the depositary. In fact, the ability of an ADS and HDR holder to instruct the depositary on how to vote will depend on the term and procedures to provide instruction directly to the depositary or through a holder custody and liquidation system. With respect to ADSs, if no instruction is received, the depositary may, subject to certain limitations, appoint an attorney designated by the Company.

Legal protections for holders of Company securities differ from one jurisdiction to another and may be inconsistent, unknown or less effective than investors expectations.

Vale is a global company whose securities are listed on many markets and which investors are located in many different countries. Investors legal protection systems vary across the world, sometimes in relation to important aspects, and investors must be aware that, as far as the Company s securities are concerned, the protections and remedies available to them may be different from those they are used to in their markets. The company is subject to securities laws applicable in several countries, which provisions and monitoring and enforcement practices are different. The only Corporations Act applicable to the Company is the Brazilian equity companies law, with specific and substantial legal rules and procedures. The Company is also subject to corporate governance standards in various jurisdictions in which its securities are listed, but, as a foreign private issuer, the Company is not obliged to follow many of the corporate governance rules which apply to domestic issuers in the United States with securities listed on the New York Stock Exchange and is not subject to U.S. proxy voting rules. Likewise, the Company has been granted waivers and exemptions regarding certain requirements provided for in the Rules Governing the Listing of Securities on the Stock Exchange of Hong Kong Limited (HKEx Listing Rules), in the Code of Mergers and Acquisitions and Share Repurchases and in the Securities and Futures Ordinance of Hong Kong, which are generally applicable to issuers listed in Hong Kong.

Risks related to environmental issues

The collapse of Samarco Mineração S.A. (Samarco) s tailings dam in Minas Gerais may adversely affect the Company s business.

On November 5, 2015, one of Samarco s tailings dam (Fundão) burst, releasing mud and waste, which flooded and affected several communities causing environmental damages surrounding areas and communities. Consequently, Mina Alegria, owned by Vale and located in near said dam, began operating only with dry processing and short of its

35

Table of Contents

capacity/productivity, because the conveyor belt that connects the mine to Fábrica Nova at the Timbopeba plant was damaged, reducing the production of the Alegria complex, in the municipality of Mariana, in the State of Minas Gerais. Moreover, the sale of run-of-mine minerals (ROM) from the Fazendão mine to Samarco s mine was disrupted due to the event. The Company continues explore alternatives for these mines. However, if it can t find suitable alternatives, there could be a negative impact on its overall production.

Table of Contents

The Company s obligations under the agreement signed as the result of the Samarco dam collapse may substantially impact the Company s financial situation.

Samarco and its shareholders, Vale and BHPB Ltda Brazil. (BHPH), a Brazilian subsidiary of BHP Billiton plc (BHP Billiton), signed an agreement on March 2, 2016 with government agencies, including the Federal Government and two Brazilian States that were affected by the dam s collapse (Espírito Santo and Minas Gerais). The agreement provides that Samarco, Vale and BHPB will create a foundation to develop and implement remedial and compensatory programs involving substantial amounts over many years. For more information, please see the item 4.7 below.

Currently, Samarco is suspended from performing mining and processing activities. Samarco s administration is developing a plan that will allow it to resume operations, but possibility, time and scope of said resumption remain uncertain. If the Samarco does not comply with its obligations to contribute resources to the Foundation, Vale and the BHPB are obliged to allocate resources to the Foundation, in proportion to their respective shareholdings to 50% in Samarco. If Samarco eventually cannot resume operations or if it does not comply with the contribution obligations provided for in the agreement, the Company will be required to make such contributions and, therefore, any provision are likely to be acknowledged in its financial statements.

The Company s business is subject to environmental, health and safety incidents.

The company s operations involve the handling, storage, disposal and deposition of hazardous substances to the environment and the use of natural resources. The mining sector is usually subject to significant hazards and risks, including risks of fire, explosions, toxic gas leaks, spill of polluting substances or other dangerous materials, incidents with sliding rocks and slopes in the mining operations and incidents involving equipment or mobile machinery. Such situations can occur by accident or by violation of operating and maintenance standards, resulting in significant environmental impacts, including damages or destruction of mineral assets or production facilities, injuries or death to people, damages to the environment, delays in production, financial losses to the company and third parties, and possible legal liability. Notwithstanding Vale s rules, policies and controls, operations remain subject to incidents or accidents that may adversely affect the business and/or the reputation of the Company.

The Company s businesses may be affected by environmental, health and safety regulations, including regulations pertaining to climate change.

Almost every aspect of the Company s activities, products, and services and projects worldwide are subject to environmental, health and safety regulations, which may expose the Company to increased liability or costs. Such regulations require that the company to obtain environmental licenses, permits and authorizations for its operations, and to conduct assessments on their environmental and social impact, in addition to defining social and environmental programs and mitigation of impact programs to obtain approval of their projects with the issuing of due permission to begin the prospection, implementation and operation of their developments. Significant updates in existing operations may also be subject to new regulations requirements. The complexity of licensing process can lead to delays in the installation of the projects, to cost increases and it may adversely impact the Company s production volumes. Social, environmental , health and safety regulation also imposed standards and control on mining research, mining, pelletizing, rail and maritime services, ports, and maritime transport, ports, decommissioning, refining, distribution and trading of their products. These regulations may entail considerable costs and responsibilities.

Furthermore, communities and other stakeholders may increase their demands for environmental practices and more sustainable social responsibility , which may involve the creation or revision of government regulations and policies, therefore leading to a significant increase in Company s costs with consequent impact on profitability. Disputes related to these and other issues may negatively affect the Company s financial situation or harm its reputation.

Table of Contents

It is worth noting as an example that, in Brazil, according to the Resolution from the National Council on the Environment (CONAMA) No. 237/97, the maximum term for environmental licenses is 5 (five) years for previous license, 6 (six) years for installation license, and 10 (ten) years for operations license.

Environmental, health and safety regulation, in many of the countries where Vale operates, has become more strict in recent years, and it is possible that the greater degree of regulation or more severe enforcement than the existing ones may negatively affect the Company through the imposition of restrictions on Company activities and products, by creating new requirements for the issuing or renewal of environmental licenses, by increasing costs or forcing the Company to engage in costly efforts to recovery certain areas. For example, changes in Brazilian legislation for protection of natural underground chambers forced the Company to conduct extensive technical studies and negotiate compensatory measures with Brazilian environmental regulators in order to continue to operate in certain places. It is possible that in some iron ore mining operations or projects there might arise the obligation to limit or change the mining activities, incurring additional costs to preserve natural underground chambers or to offset the activities impact on them, and the consequences may be relevant to production volumes, costs or reserves in the Company s iron ore business. For further details on Brazilian environmental regulations regarding chambers, please see the item 7 of this Reference Form.

In response to the collapse of the Samarco s tailings dam in the State of Minas Gerais, additional environmental, health, and safety rules and regulations and standards and additional may arise in Brazil and the authorities may impose stricter requirements to the project licensing process and Company operations. In addition, the Company may face delays in receiving operational licenses for other tailings dams.

National policies and international regulations on climate change may affect several of the Company s businesses in different countries since the company operates worldwide. For example, there are laws in many countries where the Company operates that limit greenhouse gas emissions in the mining industry. There is more pressure from international agencies to set a global carbon price and for companies and Governments to adopt strategies for set carbon pricing, which can adversely affect the coal business.

Additionally, regulatory initiatives at the national and international levels that affect transportation practices could increase the Company s costs or compel the Company to make new investments.

Natural disasters can cause serious damages to the company s operations and projects in countries where it operates and/or they may have a negative impact on its sales to countries adversely affected by such disasters.

Natural disasters, such as windstorms, droughts, floods, earthquakes, and tsunamis may negatively affect the Company s operations and projects in the countries where it operates, and they may generate a drop in sales to affected countries in negative ways, among other factors, through power failure and the destruction of facilities and industrial infrastructure. In addition, although the physical impact of climate change on the Company s businesses remain highly uncertain, the Company may experience changes in precipitation patterns, water shortages, rising sea levels, more intense storms, and flooding as a result of climate change, which could adversely affect its operations. In a few specific occasions in recent years, the Company had found that force majeure events have occurred due to the effect of rigorous weather on the Company s mining and logistics activities.

4.2 Description of the main market risks

Brazil s political and economic instability could affect the Company s business and the market price of the Company s securities.

The economic policies of Brazilian Federal Government may have major effects on Brazilian companies, including Vale, as well as on market conditions and the prices of Brazilian securities. The Company s financial status and operations results

Table of Contents

could be negatively affected by the following factors and by the reaction of the Federal Government to the following factors:

currency exchange rate fluctuation and volatility;

inflation and high interest rates;

current accounts deficit financing;

liquidity of the domestic capital and loan markets;

tax policy;

political instability resulting from allegations of corruption involving political parties, elected officials or other public officials; and,

other political, diplomatic, social and economic events taking place in Brazil or that affect Brazil.

Historically, the political situation in the Country has influenced the performance of the Brazilian economy and political crises have affected the confidence of investors and the general public, resulting in an economic downturn and increased volatility of securities issued abroad by Brazilian companies. Ongoing corruption investigations have resulted in charges against public officials and members of various political parties. The political turmoil could worsen Brazil s economic uncertainties and increase the volatility of the Brazilian capital market as well as of securities issued by Brazilian companies.

In 2015, Brazil faced an economic recession, adverse tax events, and a political instability that has continued through 2016. The Brazilian GDP dropped 3.85% in 2015, while the unemployment rate increased from 4.3% in 2014 to 6.9% in 2015. Inflation in 2015 was 10.67% (reported by the Brazilian Institute of Geography and statistics IBGE), compared to 6.41% in 2014. The Brazilian Central Bank s base interest rate (SELIC) increased from 11.75% on December 31, 2014, to 14.25% on December 31,2015. Future economic, social and political events in Brazil may harm the Company s businesses, its financial status or the results of operations, or they may cause the market value of its securities to fall.

Significant Market Risks Applicable to the Company

The Company is exposed to various market risk factors that may have an impact the Company s cash flow. Considering the nature of the Company s businesses and operations, the main factors of market risk to which it is exposed are:

Exchange and interest rates;

the price of products and inputs;

Exchange rate risk

Table of Contents

The Company s cash flow has been subject to the volatility of several currencies since the price of company products are predominantly indexed to the U.S. dollar, while a significant part of the costs, expenses and investments are indexed to other currencies, mainly the Brazilian Real and Canadian dollars, as shows in the following risk:

The exchange rate volatility of the currencies in which the company performs its operations relative to the U.S. dollar could adversely affect its financial status and operating results.

A substantial part of the Company s revenue and debt are in U.S. dollars, and changes in exchange rates can result in (i) variations in its net debt in USD and in accounts receivable; and (ii) changes in the fair value of its monetary derivatives, used to stabilize its cash flow in U.S. dollars. In 2015, the Company had foreign exchange losses amounting to US$ 7.2 billion, while in 2014 and 2013 foreign exchange losses were US$ 2.1 billion and US$ 2.8 billion, respectively. Additionally, the exchange rate volatility of the Brazilian real, Canadian dollar, Australian dollar, Indonesia rupiah, and other currencies against the U.S. dollar, affects the results of the Company, because the largest part of the cost of goods sold is in currencies other than the U.S. dollar, mainly the Brazilian real (49% in 2015) and the Canadian dollar (13% in 2015). While the Company s revenue is denominated mainly in U.S. dollars. The Company estimates that currency fluctuations shall continue to affect its profit generation, expenses, and cash flow.

A significant volatility in the exchange rate of currencies can also result in disruption of foreign exchange markets and can limit the Company s ability to transfer or convert certain currencies into U.S. dollars and into other currencies for the purpose of making timely payments of principal and interest on debts. Central banks and governments of countries where the Company operates may impose restrictive currency policies in the future and they may impose taxes on foreign exchange transactions.

Risk of Interest Rate

The company is also exposed to interest rates on loans and financing. Debts with floating interest rates in U.S. dollars consist mainly of loans including operations of exports pre-payment and loans from commercial banks and multilateral agencies. In general, these debts are indexed to Libor (London Interbank Offered Rate). Floating debts denominated in Brazilian Real are mainly indexed to the CDI (Interbank Deposit Certificate), to the TJLP (Long Term Interest Rate) and IPCA (Broad National Consumer Price Index), but most of these debts are converted to fixed rates in U.S. dollars through swap operations.

On December 31, 2015, 74.3% of the Company s debt was denominated in U.S. dollars (US$), corresponding to R$ 83.682 million, of which R$ million fixed and interest 56.031 R$ 27.651 million tied to the Libor. Other 19.2% of debt were in Brazilian Reais (R$), corresponding to R$ 21.638 million, and R$ 11.439 million were tied to the DI Rate, R$ 8.903 million were linked to TJLP, and R$ 1.296 million to fixed interest and others. The remaining 6.5% debt, corresponding to R$ 7.347 million at fixed interest rates, was predominantly in Euros ( ).

Risk of products and inputs price;

The company is exposed to market risks related to the volatility of the prices of their products and production inputs, as highlighted next:

The prices charged by the Company, including the prices of iron ore, nickel, copper, coal and fertilizers is subject to volatility.

Iron ore prices are based on a variety of price options, which often use spot price indices as a basis to set the price to the customer. Nickel and copper prices are based on reported prices for these metals in commodities markets, such as the London Metal Exchange (LME) and New York Mercantile Exchange (NYMEX). The Company s prices and revenues for these products are, consequently, volatile, which can negatively affect its cash flow. Metals global prices are subject to significant fluctuations and are affected by many factors, including current and projected macroeconomic conditions and global policies, supply and demand levels, availability and cost of substitutes, inventory levels, investments in commodities

Table of Contents

funds and others, and shares from commodities market participants. A continued market price reduction of the products sold by the Company may result in suspension of some of its projects and operations and reduction in mineral reserves and asset impairment, which could negatively affect the Company s financial status and operational results.

In 2015, the price of raw materials for steel production, such as iron ore, coal, and nickel, dropped when the offer was greater than the demand. In addition, copper prices fell as a result of the lower demand, although there were some disruptions in supply.

The company is particularly exposed to fluctuations in the price of iron ore. For example, a price reduction of US$ 1 per dry metric ton unit (TMS) in the average price of iron ore would have reduced our operating income for the year ended on December 31, 2015, in approximately US$ 320 million. The average price of iron ore fell 59% over the last two years, from US$ 135.00 per TMS in 2013 to US$ 97.00 per TMS in 2014, and US$ 55.5 per TMS in 2015, according to the Platts IODEX average (62% Fe CFR China). On February 29, 2016, the average price of iron ore at the Platts IODEX until had been US$ 44.10 per TMS. In addition to the lower iron ore demand, a surplus has been adversely affected the Company s prices since 2014, and it can increase with the expected completion of certain iron ore projects in the coming years.

World nickel prices have also been negatively affected by lower demand and a strong increase in supply in the nickel industry, especially in China. The refining of nickel in China, using mainly nickel ores and related imported raw materials, rose to 417 thousand metric tons from 2006 to 2015, with Chinese production of pig iron from nickel representing 19% of the global nickel production. Chinese production of pig iron from nickel was adversely affected by export restrictions in nickel ore producing and supplier countries. If these export restrictions are withdrawn and the Chinese producers of pig iron from nickel to have access to quality nickel ore again, pig iron production can become competitive again, thus, increasing the overall global supply of nickel and negatively impacting nickel prices.

For additional information on the average prices obtained for the products traded by the Company, please see item 10.2 of this Reference Form.

The financial performance and the economic viability of some of the Company s operations may be significantly impacted by a continuing drop in demand and in product prices. For example, in 2015, the Company suspended certain iron ore and manganese operations, and other operations may be suspended in the future. Furthermore, in the case of nickel operations in New Caledonia, the impact of lower prices and lower demand for nickel has been aggravated by the ramp up in those facilities. The Company is considering several options to ensure the continuation of operations in New Caledonia. If these options are not available and the current conditions remain adverse, the Company might consider a reduction or an interruption of production for some time.

Table of Contents

For more information about the risks related to inputs, please see the Risk Factors described in item 4.1 (a) above: Higher costs of energy or energy shortages may adversely affect the company s business.

Table of Contents

4.3 - Publicly known and relevant in-court, administrative or arbitration proceedings

On December 31, 2015, the Company was not party in non-secret arbitrations.

(i) Labor

On December 31, 2015, the Company was defendant in 23,643 labor lawsuits, in a total of R$13.5 billion, for which there is R$7 billion provision due to risks involved. Labor lawsuits filed against the Company relate to matters as overtime, time in itinere, health hazard and dangerous conditions premium, salary equity, and outsourcing, among others.

The tables below present an individual description of labor suits relating to the business of the Company and/or its subsidiaries on December 31, 2015.

1) Claim no. 01266-2006-012

Jurisdiction	6th Panel Supreme Labor Court
Instance	3rd Instance
Date of filing	11/27/2006
Parties in the suit	Minas Gerais Public Prosecutor for Labor Matters (MPT-MG) (plaintiff) and Vale (defendant)
Amounts, goods or rights involved	R$ 12,378,497.96
Main facts	The MPT-MG filed, on November 27, 2006, a public civil action seeking to prevent the outsourcing of (i) operation of machines and equipment used for mining, such as wheel loaders, bulldozers and drills; (ii) monitoring and reading of instruments in the tailings dams and waste dumps; and (iii) preparation and execution of fire-plan (detonation). On August 20, 2009, the ruling was issued (partially favorable) ordering Vale to refrain from outsourcing the services mentioned above, namely, performing such activities with its own employees. The court stated that such services were the main activities of the Company and thus could not be outsourced. On February 22, 20/10, the Superior Regional Labor Court of the Third Region (TRT3) rejected Vale s appeal and partially accepted the appeal filed by the MPT-MG, granting the legal protection

sought, forcing Vale to immediately comply with the decision.

On May 18, 2010, Vale filed an appeal for review before the Supreme Labor Court (TST), claiming the violation of article 129, III, of the Federal Constitution, and article 83 of the Complementary Law No. 75/93, as well as of divergent case law based on the lack of collective

Table of Contents

	interests authorizing the filing of the public civil action by the MPT-MG, which could result in the lack of competence of such office to file such a claim and, consequently, dismissal of the action without appreciation on merits (article 267, I and VI and article 295, V, of the Code of Civil Procedure). Vale has also claimed the violation of Article 5, items XXII, LIV and LV, of the Federal Constitution and of Article 899 of the Consolidation of Labor Laws (CLT), because of the inapplicability of the mortgage ordered by the TRT3 without an enforcement procedure. Finally, Vale claimed the violation of items II and XIII, of Article 5, and sole paragraph of article 170, both of the Federal Constitution, in view of the violation of the right to freely work, provided that the legal requirements are met, considering that activities performed by service providers are specialized and can be legitimately agreed. On May 21, 2010, in the files of the Injunction filed by Vale, the TST granted the preliminary order to suspend anticipated effects determining immediate compliance with the decision. On July 19, 2010, Vale filed an Interlocutory Appeal before the TST to contest the TRT3 s dismissal of the Appeal for Review. On March 18, 2015, the interlocutory appeal filed by Vale was granted was and Vale s Appeal for Review was accepted. On April 8, 2015, the Appeal for Review was partially judged in Vale s favor, nullifying the motion for clarification pronounced by the TRT3. Despite the above decision the MPT-MG understands there is a fine for alleged non-compliance with decision. As a precaution, Vale is calculated the amounts claimed by the Prosecution Office (around R$ 7.6 million) that would be added to the original claims of the process classified with the probability of remote loss. Due to said questioning by the MPT-MG, the amount set forth in the case was reassessed for the purpose of taking into consideration the MPT-MG s new claims concerning noncompliance with the judicial decision. Therefore, the amount claimed in the case was adjusted from R$ 856.0 thousand on December 31, 2014, to R$ 12.8 million on December 31, 2015, despite the fact that Vale does not agree with the noncompliance claim or with the fine. The case files were sent back to the TRT3 for new judgment of the Motion for Clarification. Once the Motion for Clarification was rendered, a new Appeal for Review was filed and, when it was dismissed, an Interlocutory Appeal was filed and is currently pending in the TST.
Chances of loss	1.8% of the total updated claim was classified as a Probable Loss, and the remaining amount has been classified as a Remote Loss
Analysis of impact in the case of losing the suit/ Lawsuit s relevance to the Company	In case of maintenance of the unfavorable decision, Vale is obliged, in Minas Gerais, to refrain from outsource services aforementioned, having to perform such activities through its own employees; and to provide for the termination of contracts of outsourcing which may have as their purpose such services.

Table of Contents

Notes	There is only one labor claim filed by the employee from outsourced companies who is on the list attached to the files of the Public Civil Action at stake who claims to be an employee of Vale (Labor Court of Ouro Preto, case no. 1562-2012-069). Regarding recognition of employment relationship with Vale, the case was dismissed in the first and second instances, and the case was finally dismissed on February 24, 2014.

Table of Contents

2) Claim no. 0000676-11.2012.5.24.0041

Court	Labor Court of Corumbá Mato Grosso do Sul
Instance	1st Instance
Date of filing	10/24/2012
Parties in the suit	Mato Grosso do Sul Public Prosecutor for Labor Matters (MPT-MS) (plaintiff) and Mineração Corumbaense Reunida - MCR (defendant)
Amounts, goods or rights involved	R$ 180,384.07
Main facts	The MPT-MS filed a public civil action claiming that MCR should be compelled to comply with labor safety rules set forth in Labor Regulatory Rules. On December 12, 2012, MCR filed its defense, claiming that it has Always complied with Regulatory Rules and that the accident reported in the action has not occurred due to non-compliance by the employee with the safety rules and procedures required by the Company. Upon the initial hearing, the court determined an examination to find whether or not there is non-compliance with Regulatory Rules. Judicial decision was issued, without a monetary value, condemning MCR to only register the Special Service in Engineering and Safety SESMT and Occupational Medicine, according to the Regulatory Rules. Non-compliance with the obligation to do shall cause incurrence of R$ 60,000.00 fine per event, for the benefit of the Worker Support Fund (FAT) or any other social fund for the collectivity, to be indicated during the enforcement phase. Other claims were judged inappropriate. The MPT-MS filed an ordinary appeal that was dismissed, thus the MPT-MS filed an Appeal for Review. The Appeal for Review was accepted and is currently pending.
Chances of loss	Possible and remote.
Analysis of impact in the case of losing the suit/ Reasons for importance for the Company	Non-compliance with the obligation to do shall cause incurrence of R$ 60,000.00 fine per event, for the benefit of the Worker Support Fund (FAT) or any other social fund for the collectivity, to be indicated during the enforcement phase. The obligation to do so imposed on MCR has already been fulfilled.

Table of Contents

3) Claim n. 00329.2006.92020003

Jurisdiction	Labor Court of Maruim Sergipe
Instance	3rd Instance (Supreme Labor Court)
Date of filing	01/23/2001
Parties in the suit	Vale S.A. (defendant) and Union for workers extracting iron, basic and precious metals-Sindimina (plaintiff)
Amounts, goods or rights involved	Guarantee of the operational activities at the potassium chloride mine in Sergipe.
Main facts	Lawsuit brought by SINDIMINA union in the State of Sergipe on January 23, 2011, aiming to improve the suitability of the working conditions of employees in the underground potash mine in Sergipe to bring them up to regulatory standard NR 15, especially as regards the temperature of the mine and noise level. Vale filed the defense on February 14, 2001, claiming the lack of competence of the Union to file the action and the lack of infringement against regulating rule NR-15, which would be proved in the Discovery phase. On February 20, 2006, the ruling was issued determining the adoption of measures, within 30 days, to improve the cooling of the mine, otherwise the activities would be interrupted until the implementation of such measures, and a daily fine of R$ 100,000 would be applied. On September 25, 2006, Vale filed an appeal to the Regional Labor Court (TRT) . On August 07, 2007, Vale s appeal was partially accepted. to exclude the interruption of mine activities and the payment of a daily fine of R$ 100 thousand from the conviction. On November 29, 2007, Vale filed an Appeal before the Supreme Labor Court (TST) that was rejected on December 19, 2012. On February 6, 2012, Vale filed a motion for clarification, which was rejected. In March 2012, Vale filed another appeal to the Individual Bargaining Session 1 (SDI-1) and also an Extraordinary Appeal to the Federal Supreme Court STF). On November 2013, the parties requested a dispute settlement, and it was agreed upon in the settlement hearing that a commission would be created to assess the work environment and the commission s report would be entered into the case files and the eventual agreement would be approved. On May 18, 2015, the case was redistributed by succession to the office Judge Walmir Correia da Costa. The process is still suspended and awaiting the conclusion of the report conducted jointly by the parties.
Chances of loss	Probable
Analysis of impact in the case of losing the suit/ Reasons for importance for the Company	Any unfavorable decision may impose the adoption of measures to adjust the working hours and the temperature in the underground mine, under the penalty of obligation to do so, fines and, in the worst

Table of Contents

	case scenario, total or partial shutdown of the exploration activities in the underground potassium chloride mine No amount has been allocated since Plaintiff s claim refers to an obligation to do something (that is, to adapt working conditions to the relevant laws and regulations), with no impact on past and current results. It should be noted that, notwithstanding the outcome of the claim, Vale is already making improvements in the mine conditions. Moreover, the decision provides for the payment of a daily fine if the company continues to develop the mine activities without taking into account the obligation to adapt working conditions to the relevant laws and regulations as provided for in the court ruling. Therefore, the Company will only be subject to a fine (i) when the decision becomes final (res judicata) and (ii) if an expert evidence demonstrates that the measures adopted by the company were not sufficient to adjust the working environment to the court ruling.

4) Case # 0292800-44.2009.5.08.0117

Jurisdiction	2nd Labor Court of Marabá-PA
Instance	1st instance
Date of filing	2009
Parties in the suit	Vale S.A. (defendant) and the Federal Prosecution Service for Labor Matters(MPT PA) (plaintiff)
Amounts, goods or rights involved	R$ 817,867,226.32
Main facts	In 2009, after a fatal accident involving a Company employee, the MPT-PA filed a Public Civil action pleading safety and health measures at work and, at the end, it requested that the company was ordered to pay the sum of R$ 1 million, for collective pain and suffering damages, in addition to a fine in the amount of R$ 50 thousand per noncompliance. Subsequently, the MPT-BP amended the initial complaint to demand that the value of compensation for pain and suffering was increased to R$ 10 million. On June 11, 2015, a decision was pronounced by the judge of Marabá who ordered the Company to pay collective pain and suffering damages in the amount of R$ 44.1 million, a much higher sum than what had been originally requested by the MPT-PA. Vale was also ordered, extra petita (a request not made by the MPT-PA) to pay the amount of R$ 326.3 million for social dumping, as well as retroactive interest on arrears in the amount of R$ 310.2 million, and a fine of R$ 7.7 million for vexatious litigation in addition to court fees in the

Table of Contents

	amount of R$ 15.8 million R$. The total amount of the conviction was R$ 804.1 million. On June 16, 2015 a preliminary decision was published in the Writ of Mandamus filed by Vale before the Regional Labor Court (TRT) determining the reduction of court fee to R$ 200 thousand to protect the Company s right to appeal against the Marabá judge s decision. On October 20, 2015, after Vale s Ordinary Appeal, the decision of the 2nd TRT of the 8th Region was published favoring Vale. It ordered review of the Marabá judge s decision to reduce the was published for the second ruling TRT of the eighth region, largely favorable to Vale, ordering the reduction of the compensation for collective pain and suffering to R$ 1 million and the exclusion of the conviction for social and vexatious litigation pronounced by the Marabá judge. After this 2nd instance decision of the total amount of the conviction was reduced from R$ 804 million to R$ 1.1 million. On October 26, 2015, Vale filed a Motion for Clarification to clear some questions concerning the decision. The Motion has not yet been heard.
Chances of loss	Possible loss, because, after the second instance decision, all items acknowledge in the sentence were removed, and only collective pain and suffering was maintained in the amount of R$1.1 million. The amounts from the other orders, assigned by the 1st instance assigned judge in addition to the claim made by the Plaintiff have a remote loss prognosis.
Analysis of impact in the case of losing the suit/Reasons for importance for the Company	The Company considers the case relevant on account of the amount involved recognized in first instance sentence (R$ 804 million) and impact on the adoption of various health and safety measures at the location (Carajás).

5) Notices of Infraction # 20.588.905-1 and 20.589.903-0

Administrative Level	Ministry of Labor and Employment (MTE)
Instance	2nd Administrative Instance
Filing Date	12/02/2015
Parties in the suit	MTE and Vale
Values, assets or rights involved	R$ 381,168,52 (R$ 435.62 relative to notice # 20.588.905-1, and R$ 380,732.90 relative to notice # 20.589.903-0)
Key facts	In February 2015, the Ministry of Labor and Employment (MTE) supervised the activities of the company Transportadora Ouro Verde S.A. (Ouro Verde), which was providing transportation services, to Vale, of finished goods between Mina do Pico (Itabirito-MG) and railway terminals in Mina de Fábrica (Congonhas-MG).

49

Table of Contents

	This inspection in a notice of infraction issued by the MTE, for alleged (i) inadequate hygiene conditions; (ii) violation of safety regulations; (iii) excessive long shifts; (iv) the outsourcing of finished products was classified as a main activity, and thus not cannot be outsource; and, (v) based on the previous infractions, the MTE issued notice of infraction for practices similar to slavery. Although the violations listed in the notice of infraction were associated with Ouro Verde, since the outsourcing was deemed illegal, all violations were drawn up against Vale. Vale filed administrative defenses before the MTE claiming: (i) that the product transportation is an activity that can be outsourced; (ii) that there was not direct employment relationship between Vale and Ouro Verde s employees; (iii) that there was a misunderstanding in the classification of the alleged irregularities as work analogous to slavery . The administrative defenses were not accepted and Vale has filed an administrative appeal at a 2nd instance court. In April 2016, decisions were rendered denying Vale s appeal. After exhausting its options at the administrative level, Vale filed an injunction (case # 0010627-83.2016.5.03.0005) and was granted a suspension of fine enforceability. The main complaint, a Motion to Annul Notice of Violation, was filed by designation on May 27, 2016. As a result of the notices of infraction by the Ministry of Labor (MPT), Public Civil Inquiry # 3212.2014.03.000/9-12 was filed to investigate the alleged slavery-like practices by the service provider Ouro Verde. Vale signed a Conduct Adjustment Agreement (TAC) on 118/2015 with the MPT, through which they agreed on preventive and corrective measure to ensure the labor rights of contractors employees of service providers. The agreed upon commitments are being duly implemented. For more information on the TAC, see item 4.7.
Chance of loss	Possible
Analysis of the impact in the event of loss/reasons for the importance of the process for the company	Low economic value, but relevant image impact.

Table of Contents

(ii) Taxes

The tables below present a description of individual tax cases considered relevant to the business of the company and/or its subsidiaries.

As result of some tax exceptions engaging companies at Vale group, the Company creates a provision totaling, on December 31, 2015, the amount of R$ 1,052 billion, of which (i) R$369 million are related to controlled companies abroad, (ii) R$240 million are related to Brazilian controlled companies, (iii) R$ 338.0 million relate to provisions related to CFEM-related procedures (described in item 4.6(ii) in this Reference Form), and (iv) R$105 million related to other tax procedures of the Company.

With regard to the processes listed below which challenge the taxation of IRPJ and CSLL on profits from Company s affiliates abroad, it is important to notice that (i) regarding the period from 2009 onwards, tax authorities may issue new tax assessments to ensure the right to collect from the remaining balance of values of said taxes, should they understand that the calculation done by the Company is not correct; (ii) regarding the portion of IRPJ and CSLL questioned in Writ of Mandamus no. 2003.51.01.002937-0 (item 1 in this section), the Company adhered to the Special Installment Program established by Law 12.865, dated October 9, 2013 (Special Installment Program); and (iii) regarding the other portion of IRPJ and CSLL discussed in Writ of Mandamus no. 2003.51.01.002937-0 (item 1 in this section), related to the period between 2002 (containing generating facts occurring in the period between 1996 and 2002), part of the debts related to year 2005 (related to tax credits that appear in Active Debt Certificates no. 70.2.12.000303-20 and 70.6.12.000814-20, arising out of Administrative Procedure no. 18471.001.243/2007-69, and supported in Tax Collection an no. 0015197-06.2012.4.02.5101), and year 2013 and following, were not object of adherence to the installment program.

Debts related to the years between 1996 and 2002 were not included in the tax recovery program due to the retroactive nature of the tax law, principle violated by the sole paragraph of article 74 in MP 2158/01, which, created only in 2001, intended, under legal fiction, require taxation of past events (1996 to 2001) in 2002. regarding the portion of the tax credit for year 2005, there is no adherence, as the portion corresponding to the requirement of taxes arising out of accrued compensated tax losses in prior years (1996 to 2002). Regarding the years 2013 and following, there is no adherence considering that the installment program allows for the payment of debts which generating facts occurred solely by December 31, 2012. These years, therefore, are outside of the scope of the program. The total amount of the dispute between 1996 and 2002 is R$ 2.051 billion (US$ 525 million)

Additionally, considering the decision favorable to the Company in May 2012, attributing suspensive effects to the extraordinary appeal and, consequently dismissing the applicability of amounts being questioned, duly approved by the Plenary in April 2013, there is no need to post any bond while such favorable decision is still in force. In this sense, the company has used all the surety bonds and cancelled a pledge related to the third act of infringement (2007).

The special appeal addressed to the Superior Court of Justice (STJ), filed in the Writ of Mandamus no. 2003.51.01.002937-0 was judged in the session held on November 26, 2013, when Reporting Justice an Napoleão Maia, recognized (admitted) in part the appeal, and in this portion, he granted it, while Justice Sérgio Kukina partially granted the appeal, and, in that portion, denied it. This judgment was resumed on March 25, 2014, when Minister Ari Pargendler presented his vote, accompanying the reporting judge Napoleão Nunes Maia Filho, considering inapplicable the taxation of profit from foreign companies controlled by Vale, since international treaties against double taxation should prevail. The judgment session ended on April 24, 2014, when the First Panel of the STJ decided, by majority of votes, in favor of Vale. The decision was published on May 20, 2014.

Table of Contents

This decision determined: (i) the incompatibility of the taxation regime on profits from affiliates domiciled abroad introduced by article 74 of the Preliminary Order no. 2.158-35/01 with certain international treaties against double taxation; (ii) the illegal nature of the taxation with positive results on asset equivalence set forth in article 7th, Normative Instruction no. 213/2002; and (iii) that profits gained by Vale in the Bermudas are subject to the terms in article 74, caput in MP 2.158-35/2001. The National Treasury filed an Extraordinary Appeal before the Federal Supreme Court, which is pending judgment.

Debts listed in said Writ of Mandamus and in discussion on the records of the following processes were included in the Special Installment Program: (i) Tax Collection 0023959-11.2012.4.02.5101 (IRPJ and CSLL debts related to years 2003 to 2006); (ii) Tax Collection 2011.51.01.518168-2 and Motion for Tax Collection 2011.51.01.509917-5 (IRPJ and CSLL debts related to year 2007); (iii) Tax Collection 0023958-26.2012.4.02.5101 (IRPJ and CSLL debts related to year 2007); (iv) Tax Collection 0011487-75.2012.4.02.5101 (CSLL debts related to year 2008); (v) Tax Collection 0011476-46.2012.4.02.5101 and Motion for Tax Collection 0013553-28.2012.4.02.5101 (IRPJ debts related to year 2008); and (vi) Tax Collection 0023974-77.2012.4.02.5101 (CSLL debts related to year 2008).

As determined in the legislation applicable to the Special Installment Program, on November 29, a 2013, the Company made the initial payments of values due as IRPJ and CSLL on the profit of affiliates located abroad, due to adherence to the installment program. At the time, the Company also formally adhered to the terms of the Special Installment Program, upon delivering the respective attachments set forth by Joint Order PGFN/RFB no. 9/2013. Monthly payment of the installments has been duly made, ever since.

Adherence to the Special Installment Program implied payment to the Federal Revenue Secretariat of R$5,940 billion by the end of November 2013. Additionally, under the terms in REFIS in Law no. 12.865/13, Vale paid US$ 6.0 billion in 2013, including the advanced payment and the initial payment and Vale agreed upon paying the remaining US$ 16.3 billion in monthly payments.

Table of Contents

On December 31, 2015, the balance US$ 4.431 billion (R$ 17.301 billion) is due in 154 monthly payments, subject to interest at the SELIC rate.

The total liability for the years 2003 to 2012, including filed and unfiled periods for the Company and its affiliates, was estimated at R$ 45.0 billion - R$ 17,084 billion as principal, R$ 9,831 billion as fine, R$ 11,983 billion as interest and interest on fines, and R$ 6,094 billion as fees.

Among options offered by the legislation, the Company opted for the payment in cash of the principal related to years 2003, 2004 and 2006 and dividing, into installments, the principal, fines, and interest related to 2005, and 2007 to 2012. According to the legislation, in case of cash payment, only the principal of the tax is due while in the installment payment, 80% of fines are exempted, as well as 50% of interest and 100% of fees.

The option chosen by the Company presents estimated face value of R$ 22,214 billion, where R$ 16,222 billion as principal, R$ 1,565 billion as fine, and R$ 4,427 billion as interest and interest on fines. Reduction of the principal is due to the discount of R$798 million due to accrued losses in Brazil. The current value of this option after tax benefits is R$ 14,425 billion, and it appears to be a better option compared to total payment in cash as it reduces the pressure on liquidity and minimize the present value of payments.

Participation on REFIS had impact of US$ 6.7 billion (R$ 15.3 billion) on the net profit in 2013. In 2014, financial expenses with impact on the net profit related to interest comprising the payments made under REFIS were US$ 451 million (R$ 1.0 billion). In regards to REFIS in 2015, we had financial expenses in the amount of US$ 546 million (R$ 1,798 million).

On this matter, it is important to note that on December 18, 2013, to comply with requirements in Law an 12.865/13, the Company submitted the petition to the records of said proceedings before the Superior Court of Justice (STJ), requiring partial dismissal of the decision and waiver of arguments under which the respective actions are grounded, according to partial waiver/dismissal parameters in the Writ of Mandamus no. 2003.51.01.002937-0.

Administrative procedures nos. 18471.000141/2008-15; 12897.000868/2009-98; 10569.000135/2011-63; 12897.000023/2010-36; and, 10569.000199/2010-84, terminated. This matter is still discussed in the judicial sphere, being object of Tax Collections. These collections, in turn, were subject to dismissal, for purposes of adherence to the Special Payment in Installments, according to requirements set forth in Law 12.865/13, and the respective progress is presented in items 3.1 and 3.2, 4.1 through 4.4, and 5.1 through 5.5.

1) Writ of Mandamus 2003.51.01.002937-0

Jurisdiction	Superior Court of Justice and the Federal Supreme Court
Instance	3rd instance
Date of Filing	02/03/2003

53

Table of Contents

Parties in the suit	Vale (Plaintiff/Appellant) and National Tax Authority (Defendant/Appellee)
Amounts, goods or rights involved	Not applicable
Main facts	In February 2003, Vale filed a Writ of Mandamus to ensure the right not to be subject to income tax and social contribution as far the profits of its subsidiaries and affiliates abroad were concerned, according to the sole paragraph of article 74 of the Provisional Executive Order 2.158-34/2001, and later amendments. Arguments of the Company:(i) section 74 of the Provisional Measure overlooks the treaties against double taxation signed by Brazil; (ii) the National Tax Code forbids the aforementioned taxation as set forth by the Provisional Measure; (iii) even if section 74 of the Provisional Measure were valid, exchange variation should be excluded from the assessment of due taxes; and (iv) the rule IN 213/2002 is illegal and (v) violation of the principle of prior taxation related to generating facts occurring before December 2001. In February 2003, an injunction request was granted to suspend the collection of the tax credit resulting from the challenged legislation, so that the rules of Law No. 9.532/97 would continue to apply. In August 2005, a rejection ruling was issued, causing revocation of the injunction previously obtained by Vale. Vale filed an appeal, which was received on September 29, 2005, which reestablished the suspension to enforce the tax credit obtained by the Company in the injunction. On March 29, 2011, the Federal Regional Court of the 2nd Region (TRF 2nd Region) dismissed the appeal, rejecting the arguments of Vale. After reviewing the ruling, published on May 30, 2011, Vale has changed the prognosis from remote to possible , as reflected in its financial statements for June 30, 2011, filed on July 28, 2011. On June 3, 2011, Vale filed an appeal (motion for clarification) against the decision by the 2nd Region TRF, pointing out omissions regarding the exchange rate variation and on the unconstitutionality of the sole paragraph of article 74 of Provisional Executive Order, in addition to a contradiction relative to the application of treaties to avoid double taxation. The contradiction claimed by Vale is based on the fact that such challenged decision states, at the same time, that (a) Article 7 of the treaties against double taxation prohibits Brazil from taxing profits of affiliates and subsidiaries abroad, (b) that treaties prevail against internal laws and (c) that, however, such provision does not prevent the application of article 74 of the Provisional Executive Order 2158-35/01. On November 28, 2011, the ruling which judged the motion (motion for clarification) partially in favor of Vale was published determining exclusion of exchange rate variation on the amount of foreign

Table of Contents

	investment, but rejecting the other requests and the suspension of the tax credit granted by the appeal. On December 13, 2011, Vale filed a Special Appeal at the Superior Court of Justice (STJ) and an Extraordinary Appeal at the Supreme Court of Justice (STF). The Special and Extraordinary Appeals were admitted on May 7, 2012, the same day that Vale filed for a Preliminary Order before the Superior Court of Justice (STJ) and the Federal Supreme Court (STF) requesting attribution of suspensive effects to the Extraordinary Appeal. The Preliminary Orders aimed to suspend the application of tax credits. At the STJ, although the preliminary order was granted initially, the decision judging the preliminary order rejected Vale s claim, cancelling the preliminary order. At the STF, the preliminary order was granted on May 9, 2012 and confirmed by the panel at the STF on April 10, 2013, reason why it remains in force. On October 22, 2013, the Special Appeal by Vale (STJ) was included in the judgment agenda, but was later removed by the Federal Prosecution Office that, subsequently, issued an opinion unfavorable to Vale s claim. On November 26, 2013, the First Panel of the STJ resumed the judgment of the appeal, when the Reporting Justice and Napoleão Maia partially granted the appeal and, in this portion, granted the appeal, while Justice Sergio Kukina also granted in part the appeal and, in this portion, he denied it. This judgment was resumed on March 25, 2014, when Minister Ari Pargendler presented his vote, accompanying the reporting judge Napoleão Nunes Maia Filho, considering inapplicable the taxation of profit from foreign companies controlled by Vale, since international treaties against double taxation should prevail. The judgment session ended on April 24, 2014, when the First Panel of the STJ decided, by majority of votes, in favor of Vale, and the decision was published on May 20, 2014. In short, the decision determined (i) the incompatibility of the taxation regime on profits from affiliates domiciled abroad introduced by article 74 of the Preliminary Order no. 2.158-35/01 with certain international treaties against double taxation; (ii) the illegal nature of the taxation with positive results on asset equivalence set forth in article 7th, Normative Instruction no. 213/2002; and (iii) that profits gained by Vale in the Bermudas are subject to the terms in article 74, caput in MP 2.158-35/2001. The National Treasury filed an Extraordinary Appeal before the Federal Supreme Court, which is pending judgment.
Chances of loss	Possible (regarding the remaining discussion which debt will not be subject to adherence to the tax recovery program).
Analysis of impact in the case of losing the suit/ Reasons for importance for the Company	In the event of a final unfavorable decision, regarding all arguments raised by the Company, the Brazilian Tax Authority may collect income taxes and social contributions on profits of subsidiaries and/or affiliates abroad, taking into account the principle of the due process of law in the specific administrative and in-court collection procedures. This

Table of Contents

impact refers to the period which is not object of dismissal/waiver, for adherence to the Special Installment Plan, corresponding to the amount of R$ 1,610 billion, as IRPJ (December 2015), and R$ 0.441 billion, as CSLL (December 2015), totaling R$ 2.051 billion. Amounts related to debts in 1996 and 2002, the 2005 portion and 2013 are not included.

Notes

1 On September 20, 2012, Vale received a summoning by the Federal Revenue of Brazil recognizing extinction of values related to Exchange rate variation, in the approximate value of R$1.6 billion. Such extinction is due to the partially favorable decision issued in the judgment of an appeal (motion for stay) by the Company in this Writ of Mandamus 2003.51.01.002937-0, as described above in the item Main Facts .

2 The judgment of this direct claim of unconstitutionality (ADI) filed by the Confederação Nacional da Indústria (CNI) questioning constitutionality of article 74 in the Provisional Order 2.158-35/01 returned on April 3, 2013. On April 10, 2013, the result of such ADI was issued, and it was defined that article 74 is not applicable to affiliates located in countries without favored taxation (non-fiscal heavens), but is applicable to companies located in countries with favorable taxation (fiscal heavens). There was a decision for the retroactive nature of the sole paragraph of article 74 in the MP, implying the impossibility to apply this legislation to generating facts prior to 2002. On the same date, Extraordinary Appeals filed by Cooperativa Agropecuária Mourãoense - COAMO and EMBRACO were judged. The preliminary order of Vale was maintained under unanimous voting, as seen in an item 1.1, below.

3 - On December 18, 2013, in compliance with the terms in Law and 12.865/13, the Company filed a petition to the Superior Court of Justice requesting partial dismissal of the discussion and, also, waiving arguments under which the claim is grounded. On February 19, 2014, in the files of the Special Appeal, a partial waiver to the rights grounding the action was filed under terms required by Vale. The partial waiver produces effects in every tax contingency related to this issue, listed below

1.1) Development of Writ of Mandamus 2003.51.01.002937-0: Injunction no. 3.141

Court

Federal Supreme Court

Table of Contents

Instance	3rd Instance
Date of filing	05/07/2012
Parties to the claim	Vale (plaintiff) and Federal Government (defendant)
Values, assets or rights involved	Not applicable
Main factors	On May 7, 2012, Vale filed for an Injunction to attempt to attribute suspensive effects to the Extraordinary Appeal filed in the Writ of Mandamus (item 1) aiming suspension of the applicability of amounts for IRPJ and CSLL being discussed. On May 9, 2012, Justice Marco Aurélio Mello, from the Federal Supreme Court granted the injunction in this sense. On May 25, 2012, the Union filed an appeal. On May 28, 2012, the Union filed an appeal (interlocutory appeal) against the decision granting the appeal. On June 8, 2012, Vale filed its response to this appeal. On April 10, 2013, there was a decision rejecting, unanimously, the Union Appeal (interlocutory appeal) and maintaining the injunction favorable to Vale. This decision was published on September 30, 2013 and no appeal was filed. Therefore, unless the judges reconsider their decision, the suspensive effect will have effects until judgment of the extraordinary appeal. On December 18, 2013, Vale filed the waiver petition for purposes of adhering to REFIS. On February 14, 2014, a decision was issued determining the filing of a copy of the partial waiver request and the approving decision issued under the main Writ of mandamus (item 1 above). On February 24, 2014, Vale provided requested documents and the files moved to be appreciated by the reporting judge. The files have been closed since then.
Probability of loss	Possible (regarding the remaining discussion, which debt will not be subject to adherence to the tax recovery program).
Analysis of impact in case of loss/Reasons for the importance of the claim to the Company	In the event of any unfavorable outcome, there is a chance to require guarantee for amounts under discussion. This impact relates to the period that is not subject to dismissal/waiver for adherence to the Special Installment Program.

2) Tax Assessment Notice no. 18471.001243/2007-69

Court	Tax Appeals Administrative Council
Instance	2nd administrative instance
Date of filing	12/10/2007
Parties to the claim	National Tax Authority (plaintiff) and Vale (defendant)

Table of Contents

Values, assets or rights involved	Total debt R$ 2.051 billion (December 2015)
Main factors	On November 12, 2007, Vale was made aware of the Tax Assessment Notice which object is the collection of supposed income tax and social contribution debts levied on the accounting gain regarding the ownership equity of foreign subsidiaries in the 1996 to 2002 base years. On December 10, 2007, Vale filed the defense (Impugnation), arguing that such requirements were not valid and that no penalty could be applied because the injunction issued in favor of Vale in the writ of mandamus no. 2003.51.01.002937-0 (item 1 above) was still in force. The Internal Revenue Trial Service (DRJ, for its acronym in Portuguese) partially granted the impugnation. On August 18, 2008, Vale filed an appeal. The National Tax Authority also filed an Appeal regarding the partial reduction of the social contribution collection. At the judgment of these appeals, held on May 19, 2010, some of Vale s arguments were not assessed by the Administrative Council of Tax Appeals - CARF, because, according to this entity, the matter was deemed to be subject to assessment by the Judicial Branch. Additionally, (i) Vale s argument regarding the running of the statute of limitations as far the collections of taxes referring to generating facts occurring in 1996 and 1997 were concerned, was rejected, (ii) the application of a fine against Vale was canceled, and (iii) the appeal from the National Tax Authority was dismissed. On September 26, 2011, Vale filed a new appeal (motion for clarification) stating the existence of omissions in the decision by CARF, and the appeal was rejected. On October 3, 2011, the National Tax Authority filed an appeal (special appeal) before the Superior Chamber of Tax Appeals against the CARF decision, in the portion that cancelled the penalty. Vale responded to the appeal filed by the National Tax Authority, as well as to the Superior Chamber against the CARF decision, regarding dismissal of the claim on the statute of limitations. On January 24, 2012, the Special Major Taxpayer Office (DEMAC, for its acronym in Portuguese), ex officio, interpreting the decision of the Federal Regional Court of the 2nd Region in the writ of mandamus no. 2003.51.01.002937-0 (item 1 above) in the sense that there is an overlapping between the discussions in this administrative proceeding and in that writ of mandamus, rejected all administrative appeals and ordered the immediate collection of part of the credits that are currently object of Tax Assessment no. 0015197-06.2012.4.02.5101 (item 2.2). Therefore, the appeals filed by Vale and the National Tax Authority against the CARF decision have not been assessed by the Superior Chamber of Tax Appeals.

Table of Contents

	Vale filed a writ of mandamus (no. 0001899-44.2012.4.02.5101 item 2.1 below) to attempt to reverse the order of DEMAC and ensure the regular development of the administrative process. Alongside, the Company filed a request for reconsideration at DEMAC, which was denied and, ever since, the files are with the judge, waiting to proceed.
Probability of loss	Remote
Analysis of impact in case of loss/Reasons for the importance of the claim to the Company	In the event of any unfavorable outcome, the taxes on the accounting gain regarding the ownership equity of foreign subsidiaries discussed under this tax assessment notice may be levied. Any financial impact, however, shall only occur in case of a final unfavorable decision in the in-court collection claim.

2.1) Writ of mandamus. 0001899-44.2012.4.02.5101 related to the Tax Assessment Notice no. 18471.001243/2007-69

Court	28th Federal Court of Rio de Janeiro
Instance	1st Instance
Date of filing	02/06/2012
Parties to the claim	Vale (plaintiff) and DEMAC (defendant)
Values, assets or rights involved	Not applicable
Main factors	On February 6, 2012, Vale filed a Writ of Mandamus to suspend the order of DEMAC and ensure the development of the administrative proceeding no. 18471.001243/2007-69 (item 2 above). The injunction request was denied, and Vale filed an appeal (interlocutory appeal) against this decision and a request for reconsideration. Both were rejected. The files remain with the judge, waiting to proceed.
Probability of loss	Possible.
Analysis of impact in case of loss/Reasons for the importance of the claim to the Company	Not applicable

Table of Contents

2.2) Tax Collection no. 0015197-06.2012.4.02.5101 regarding the Tax Assessment Notice no. 18471.001243/2007-69

Court	5th Tax Collection Court of Rio de Janeiro
Instance	1st federal instance
Date of filing	03/13/2012
Parties to the claim	Federal Taxpayer Authority (plaintiff) and Vale (defendant)
Values, assets or rights involved	Total debt R$ 2.051 billion (December 2015)
Main factors	On March 12, 2012, the National Tax Authority filed a claim to collect income taxes and social contributions presumably due, in view of the decision from DEMAC mentioned in item 2 above. On April 25, 2012, the National Tax Authority filed a petition requesting seizure of dividends to be distributed by Vale on April 30, 2012. On April 26, 2012, Vale filed a petition challenging the request from the National Tax Authority and offering, alternatively, a bank guarantee to secure the debt. On the same day, the court accepted the offering of the guarantee, presented by Vale on April 27, 2012. On May 8, 2012, the National Tax Authority presented a request to block monies through the BACENJUD system - through which the judge directly accesses all bank accounts in the country - that, upon objection by Vale, was rejected due to the preliminary order granted by Minister Marco Aurélio de Mello, suspending application of tax credits, object of this enforcement (item 1.1. above). Vale then requested acknowledgement of the lack of need to guarantee the execution since application of credits is suspended and dismissal of the previously granted surety bond, granted by the Court. Faced with such decision, on May 14, 2012, Vale paid the bail. Due to the aforementioned injunction granted in the provisional remedy cited in item 1.1, the lawsuit has been stayed, as the national Tax Authority cannot collect non-applicable credits. On July 17, 2014, Vale filed a motion requesting extinction of the tax collection due to the STF decision in ADI 2.588, which determined the unconstitutional nature of the sole paragraph in article 74 in Provisional Order 2.158-35/01. Waiting for the court to comment on the motion.
Probability of loss	Remote
Analysis of impact in case of loss/Reasons for the importance of the claim to the Company	In the event of any unfavorable outcome related to the injunction object of item 1.1 above, Vale may have to present a new guarantee of the amounts in question under this collection.

Table of Contents

3.1) Development of Administrative Claim no. 18471.000141/2008-15: writ of mandamus. 0004826-69.2012.4.01.3400

Court	14th Federal Court of the Federal District
Instance	1st Instance
Date of filing	01/25/2012
Parties to the claim	Vale (plaintiff) and President of the 2nd Chamber of the Tax Appeals Administrative Council (defendant)
Values, assets or rights involved	Not applicable
Main factors	On January 25, 2012, Vale filed a writ of mandamus against the decision of the President of the 2nd Chamber of CARF, issued in Administrative Claim no. 18471.000141/2008-15. On January 27, 2012, an injunction order was issued to suspend the effects of the decision mentioned above and to determine the regular processing of administrative claims no. 18471.000141/2008-15 and 12897.00868/2009-98. The National Tax Authority filed a claim to suspend the injunction request (no. 0009426-51.2012.4.01.0000) and, on March 12, 2012, a decision was issued suspending the validity of the injunction obtained by the Company, in the writ of mandamus issued in Administrative Claim no. 18471.000141/2008-15. Vale then filed an appeal (interlocutory appeal) which was rejected. After, in April 2012, a petition was filed notifying about the preliminary order granted by Minister Teori Zavascki, suspending collection of allegedly due values. The decision on the writ of mandamus is still pending. On November 25, 2013, a decision in favor of Vale was published. On December 18, 2013, Vale filed the waiver petition for purposes of adhering to REFIS. On February 13, 2014, the judge issued an order determining that he was not entitled to appreciate the waiver request as he understood that, after publication of the decision, the judge ends with his jurisdictional activity and should be limited to correcting possible material and calculation errors. On May 2, 2014, the Prosecution Office filed an Appeal and, later, Vale reiterated its request to dismiss the claim due to adherence to the Special Payment in Installments under Law 12.865/2013. On June 10, 2014, notice was given that the Internal Revenue Service s appeal had been accepted with devolutive effect and a term of 15 days was granted to Vale to present its counterargument, which led to the refilling of Vale s request for withdrawal. The case was sent to the TRF 1 and distributed to the Reporter Hercules Fajoses. The case has been under determination since then.
Probability of loss	Not applicable due to adherence to REFIS.

Table of Contents

Analysis of impact in case of loss/Reasons for the importance of the claim to the Company	Not applicable due to adherence to REFIS.

3.2) Development of Administrative Claim no. 18471.000141/2008-15: Tax Assessment Notice no. 0023959-11.2012.4.02.5101

Court	7th Tax Collection Court of Rio de Janeiro
Instance	1st federal instance
Date of filing	3/13/2012
Parties to the claim	National Tax Authority (Plaintiff) and Vale (Defendant)
Values, assets or rights involved	R$ 14,216,689,702.56 (in November 2013, date adhering to REFIS), without reduction factors provided for in the tax recovery program. Amount included in Administrative Claim no. 18471.0000141/2008-15.
Main factors	On May 8, 2012, before publication of the unfavorable decision by the STJ, in the injunction related to the item above and, thus, when the suspensive effect of the preliminary order granted was still in effect, the National Tax Authority, even with the suspended application of credits, filed a tax enforcement act to collect IRPJ and CSLL allegedly due, which, in their understanding, would be possible considering the decision by the President of the 2nd Chamber of CARF, mentioned in item 3.1 above. On May 11, 2012, Vale filed a petition informing the granting of the injunction by the STF suspending the applicability of credits (item 1.1 above) and, on the same date, a decision was pronounced suspending this tax collection. On December 18, 2013. Vale presented a petition claiming the loss of object of the collection due to adherence to REFIS. On February 24, 2014, an order was issued determining (a) the National Treasury should comment regarding the notified payment, and (b) the presentation by Vale of a legible power of attorney, which has been complied with by the Company. The National Treasury requested an extension of the term for 90 days on November 26, 2014, and it was again invited to comment on the payment informed by Vale. On December 16, certificates were issued attesting that the National Treasury failed to comment, and suspending the claim. The decision on such request has not been published yet.
Probability of loss	Not applicable, as the debt has terminated upon adherence to REFIS.
Analysis of impact in case of loss/Reasons for the	Not applicable, as the debt has terminated upon adherence to REFIS.

Table of Contents

importance of the claim to the Company

4.1) Development of Administrative Claim no. 12897.000868/2009-98, dated 01/11/10: Writ of mandamus 2011.51.01.005614-9

Court	32nd Federal Court of Rio de Janeiro
Instance	2nd instance
Date of filing	04/29/2011
Parties to the claim	Vale (Plaintiff) and National Tax Authority (Defendant)
Values, assets or rights involved	Not applicable
Main factors	On March 15, 2011, Vale received a letter collecting income taxes and social contributions which, according to the National Tax Authority, would not be the object of the appeal filed by the Company in Administrative Claim no. 12897.000868/2009-98 On March 23, 2011, Vale filed a petition requesting the cancellation of the collection on the grounds that the claimed values were indeed covered by the appeal. On April 15, 2011, Vale received a notice from the National Tax Authority announcing the maintenance of the collection. On April 29, 2011, Vale filed a writ of mandamus to suspend the collection. The preliminary order requested in this writ of mandamus was rejected. On May 25, 2011, the Company filed an appeal (interlocutory appeal) against the decision that rejected the request for injunction to suspend the collection. On July 15, 2011, the request to suspend the effects of the previous decision in this appeal was rejected as well. On January 15, 2013, the ruling denying the writ of mandamus was issued. On January 30, 2013, Vale filed an appeal against the decision. On March 14, 2013, the judge received the appeal and attributed suspensive effect. On December 18, 2013, Vale filed the waiver petition for purposes of adhering to REFIS. The files were remitted to be appreciated by the judge. Despite of the unfavorable decision issued in this writ of mandamus, application of tax credits discussed herein is suspended due to the STF decision (item 1.1 above).
Probability of loss	Not applicable, as the debt has terminated upon adherence to REFIS.
Analysis of impact in case of loss/Reasons for the	Not applicable, as the debt has terminated upon adherence to REFIS.

Table of Contents

importance of the claim to the Company

4.2) Development of Administrative Claim no. 12897.000868/2009-98 dated 01/11/10: Tax Collection no. 2011.51.01.518168-2

Court	11th Tax Collection Court of Rio de Janeiro
Instance	1st federal instance
Date of filing	07/08/2011
Parties to the claim	Federal Taxpayer Authority (plaintiff) and Vale (defendant)
Values, assets or rights involved	R$ 33,903,846.09 (November 2013, date adhering to REFIS) included in the amount of the main administrative process described in Administrative Claim no. 12897.000868/2009-98, added with legal fees.
Main factors	On July 8, 2011, the National Tax Authority filed a claim to collect income taxes and social contributions presumably due, in view of the collection letter mentioned in item 4.1. above. On August 29, 2011, Vale submitted a surety bond guarantee regarding the tax collection, which was expressly approved by the National Tax Authority. On September 28, 2011, Vale filed a defense (motion to stay under No. 2011.51.01.509917-5), requiring the suspension of the collection until the final judgment of the main writ of mandamus (item 1 above) and the cancellation of the Company s Debt Certificate due to a material error, in view of an inconsistency of the amounts indicated therein. On September 13, 2012, the National Tax Authority presented its response to Vale s motion for collection. Applicability of tax credits discussed herein is suspended due to the preliminary order by the STF (item 1.1 above), enabling cancellation, on July 4, 2013 of the surety bond presented as guarantee. On December 18, 2013, Vale filed a petition claiming loss of objecting of this collection due to adherence to REFIS. On August 20, 2014, suspension of the execution was determined until the end of the monthly payments.
Probability of loss	Not applicable, as the debt has terminated upon adherence to REFIS.
Analysis of impact in case of loss/Reasons for the importance of the claim to the Company	Not applicable, as the debt has terminated upon adherence to REFIS.

Table of Contents

4.3) Development of Administrative Claim no. 12897.000868/2009-98 dated 01/11/10: Motion to Stay Collection no. 2011.51.01.509917-5

Court	11th Tax Collection Court of Rio de Janeiro
Instance	1st federal instance
Date of filing	09/28/2011
Parties to the claim	Vale (plaintiff) and National Tax Authority (Defendant)
Values, assets or rights involved	Value already mentioned in item 4.2 above.
Main factors	On September 28, 2011, Vale filed a defense (motion to stay) requiring the suspension of the collection until the final judgment of the main writ of mandamus (item 1 above) and the cancellation of the Company s Debt Certificate, that grounds this tax collection, due to a material error, in view of an inconsistency of the amounts indicated therein. On September 13, 2012, the National Tax Authority filed response to the motion for stay. Vale commented on the response by the National Tax Authority (response) and filed an appeal (motion for stay), requesting that the court commented about the suspension request for the collection based on the STF decision (item 1.1 above). The appeal was granted and the process was suspended. On December 18, 2013, Vale filed a petition claiming loss of objecting of this collection due to adherence to REFIS. On September 2, 2014, the National Treasury commented in favor of extinction of the tax collection due to the payments made. On March 26, 2015, the decision was issued judging the claim as extinct, with merit resolution and condemning Vale to pay attorneys fees at R$ 1,500.00. Award published on April 9, 2015, replacing the decision previously condemning Vale to the payment of attorneys fees. The Internal Revenue Service was informed on May 29, 2015. The files were downloaded on July 27, 2015.
Probability of loss	Not applicable, as the debt has terminated upon adherence to REFIS.
Analysis of impact in case of loss/Reasons for the importance of the claim to the Company	Not applicable, as the debt has terminated upon adherence to REFIS.

4.4) Development of the Administrative Claim no. 12897.000868/2009-98: Tax Assessment 0023958-26.2012.4.02.5101

Court	7th Tax Collection Court of Rio de Janeiro
Instance	1st federal instance

Table of Contents

Date of filing	05/8/2012
Parties to the claim	National Tax Authority (Plaintiff) and Vale (Defendant)
Values, assets or rights involved	R$ 17,623,009,684.76 (November 2013, date adhering to REFIS) included in the main administrative procedure described in Administrative Claim no. 12897.000868/2009-98, added with legal fees.
Main factors	On May 8, 2012, before publication of the unfavorable decision by the STJ, in the injunction related to item 1 and, thus, when the suspensive effect of the preliminary order granted was still in effect, the National Tax Authority, even with the suspended application of credits, filed a tax enforcement act to collect IRPJ and CSLL allegedly due, which, considering the administrative decision mentioned in Administrative Claim no. 12897.000868/2009-98. Applicability of tax credits discussed herein is suspended due to a preliminary order by the STF (item 1.1 above). Vale filed a petition claiming suspension of the collection based on this decision. The claim was granted and the process is suspended. On December 18, 2013, Vale filed a petition claiming loss of objecting of this collection due to adherence to REFIS. On February 20, 2014, an order was issued determining (a) the National Treasury should comment regarding the notified payment, and (b) the presentation by Vale of a legible power of attorney, which has been complied with by the Company. The National Treasury failed to comment under the legal term, and on March 26, 2014, a decision was issued determining suspension of the process. On April 7, 2014, the National Treasury requested suspension of the claim for ninety days due to Vale s adherence to the payment in installments, with legal benefits, using fiscal loss and the negative calculation base of CSLL. Waiting court decision regarding the request filed by the National Treasury.
Probability of loss	Not applicable, as the debt has terminated upon adherence to REFIS.
Analysis of impact in case of loss/Reasons for the importance of the claim to the Company	Not applicable, as the debt has terminated upon adherence to REFIS.

5.1) Development of Administrative Claim no. 12897.000023/2010-36, dated 02/12/10: Tax Collection no. 0011487-75.2012.4.02.5101

Court	1st Tax Collection Court of Rio de Janeiro
Instance	1st federal instance
Date of filing	01/26/2012
Parties to the claim	Federal Taxpayer Authority (plaintiff) and Vale (defendant)

Table of Contents

Values, assets or rights involved	R$ 21,731,827.64 (November 2013, date adhering to REFIS) included in the amount of Administrative Claim no. 12897.000023/2010-36, added with legal fees.
Main factors	On January 26, 2012, the National Tax Authority filed a claim to collect income taxes and social contributions presumably due, in view of the collection letter mentioned in item 5.1. On February 2, 2012, Vale posted a bond to secure the tax collection claim and on February 6, 2012, the Court issued a decision considering such bond. Applicability of tax credits discussed herein is suspended due to a preliminary order by the STF (item 1.1 above). On May 7, 2013, the decision was issued suspending the process based on the STF decision and dismissing the need of guarantee of collected values, also authorizing cancellation of the surety bond presented by Vale. On December 18, 2013, Vale filed the waiver petition for purposes of adhering to REFIS. On January 28, 2014, the files were remitted to the National Tax Authority. On June 24, 2014, the National Treasury requested suspension of the claim for sixty days to evaluate the payment made. On September 3, 2014, the decision was issued determining suspension of the collection until the end of the monthly payments, and the National Treasury represented to be aware on September 25, 2014.
Probability of loss	Not applicable, as the debt has terminated upon adherence to REFIS.
Analysis of impact in case of loss/Reasons for the importance of the claim to the Company	Not applicable, as the debt has terminated upon adherence to REFIS.

5.2) Development of Administrative Claim no. 12897.000023/2010-36 dated 02/12/10: Tax Collection no. 0011476-46.2012.4.02.5101

Court	4th Tax Collection Court of Rio de Janeiro
Instance	1st federal instance
Date of filing	01/26/2012
Parties to the claim	Federal Taxpayer Authority (plaintiff) and Vale (defendant)
Values, assets or rights involved	R$ 60,325,116.23 (November 2013, date adhering to REFIS), as IRPJ, value already included in the amount of Administrative Claim no. 12897.000023/2010-36, added with legal fees.
Main factors	On January 26, 2012, the National Tax Authority filed a claim to collect income tax presumably due, in view of the collection letter mentioned in item 5.1, requesting the blockage of Vale credits in procedure no. 20035101.024181-3, underway at the 12th Federal Court of Rio de

Table of Contents

Janeiro. On February 2, 2012, Vale entered the records, filing a surety bond to guarantee collection.

On May 8, 2012, before publication of the unfavorable decision by the STJ, in the injunction related to item 1 and, thus, when the suspensive effect of the preliminary order granted was still in effect, the judge, upon request by the National Tax Authority, blocked on line R$ 55,654,046.21 in cash, through the BACENJUD system - through which the judge directly accesses all bank accounts in the country. Vale filed an appeal (interlocutory appeal) against this decision. The applicability of tax credits under discussion is suspended according to a preliminary order by the STF (item 1.1 above), reason why on May 14, 2012, a court order suspended the lawsuit.

On May 14, 2014, Vale filed a petition claiming the release of the value blocked online. On May 15, 2013, the Surety Bond was returned to the Company and, subsequently, an order was issued determining that the National Tax Authority should comment regarding the claim to release the blocked value. On June 18, 2013, the National Tax Authority commented contrary to the claim to cancel the online blocking. On July 9, 2013, a decision was issued cancelling the online blocking of Vale credits in procedure no. 2003.5101.024181-3, however, the order maintained the online blocking. On December 18, 2013, Vale filed a petition claiming loss of objecting of this collection due to adherence to REFIS.

On June 16, 2014, the National Treasury requested that Caixa Econômica Federal was notified to convert into income the deposit that guarantees the enforcement, in the amount of R$ 62,698,188.94, with payment discounts provided for by Law 12.865/13, as well as requesting later review of the files to take required administrative procedures to settle the debt. The National Treasury was granted the review of the files to indicate the amount to be converted into final payment, with applicable deductions. On October 31, 2014, the National Treasury requested conversion into income of the amount of R$ 41,299,643.64 and on November 5, 2014 the order was issued by Caixa Econômica Federal to be complied with. On January 29, 2015, the National Treasury filed a brief requesting suspension of the claim for five days in order to allow the sector responsible for determining payment and cancellation could conclude the necessary procedures. On March 6, 2015, the National Treasury filed a motion informing that payments were imputed and remaining balances were cancelled, requesting the claim to be extinct. On March 19, 2015 Vale requested to withdraw the remaining judicial balance that, according to an order by Caixa Econômica, was R$14,198,955.67 on November 25, 2014. On the same date, the award was published determining extinction of the process and authorizing withdrawal of the remaining balance of the judicial deposit. On May 13, 2015, the Internal Revenue Service was informed and on May 15, 2015 the final decision was pronounced. On July 02, 2015, a permit was filed establishing the remaining amount.

Table of Contents

Probability of loss	Not applicable, as the debt has terminated upon adherence to REFIS
Analysis of impact in case of loss/Reasons for the importance of the claim to the Company	Based on legal determination, due to adherence to the tax recovery program (REFIS), the value deposited judicially, resulting from money attachment, will be converted into income in favor of the Federal Government, becoming final payment, upon application of reduction factors determined by Law 12.865/13. Possible remaining balance may be raised by Vale

5.3) Development of Administrative Claim no. 12897.000023/2010-36 dated 02/12/10: Motion to Stay Collection no. 0013553-28.2012.4.02.5101

Court	1st Tax Collection Court of Rio de Janeiro
Instance	1st federal instance
Date of filing	03/08/2012
Parties to the claim	National Tax Authority (Defendant) and Vale (Plaintiff)
Values, assets or rights involved	Value already mentioned in item 5.3 above.
Main factors	On March 8, 2012, Vale filed a defense (motion to stay) against the tax collection in item 5.3 above. The applicability of tax credits being discussed is suspended by a decision by the STF (item 1.1 above), reason why on May 10, 2012 a decision suspended the suit. On December 18, 2013, Vale filed the waiver petition for purposes of adhering to REFIS. On June 16, 2014, the National Treasury requested issuance of an order to Caixa Econômica Federal to convert R$ 62,698,188.94 into income, with payment discounts provided for by Law 12.865/13, as well as requesting later review of the files to take required administrative procedures to settle the debt. On November 5, 2014, the decision was published, extinguishing the claim, considering the dismissal due to adherence to Payment in Installments. The National Treasury represented to be aware on January 7, 2015, and there were no changes since then. The decision is res judicata and the files were archived.
Probability of loss	Not applicable, as the debt has terminated upon adherence to REFIS
Analysis of impact in case of loss/Reasons for the importance of the claim to the Company	Based on legal determination, due to adherence to the tax recovery program, the value deposited judicially, resulting from money attachment, will be converted into income in favor of the Federal Government, becoming final payment, upon application of reduction factors determined by Law 12.865/13. On February 12, 2015, the res judicata certificate was issued and on February 19, the files were written off. The remaining balance will be withdraw in the files of the respective tax collection.

Table of Contents

5.4) Development of Administrative Claim no. 12897.000023/2010-36: Tax Collection no. 0023974-77.2012.4.02.5101

Court	1st Tax Collection Court of Rio de Janeiro
Instance	1st federal instance
Date of filing	05/08/2012
Parties to the claim	National Tax Authority (Plaintiff) and Vale (Defendant)
Values, assets or rights involved	R$ 4,609,749,384.28 (November 2013, date adhering to REFIS), value included in the main administrative procedure described in Administrative Claim no. 12897.000023/2010-36, added with legal fees.
Main factors	On May 8, 2012, before publication of the unfavorable decision by the STJ, in the injunction related to item 1 and, thus, when the suspensive effect of the preliminary order granted was still in effect, the National Tax Authority filed a tax assessment notice to collect the amounts of IRPJ and CSLL supposedly due, considering the administrative decision in Administrative Claim no. 12897.000023/2010-36. The Tax Authority filed a request to block and seize monies through the BACENJUD system, which was denied. Vale informed in the files that the applicability of tax credits is suspended by a preliminary order by the STF (item 1.1 above), which caused the judge to determine suspension of the collection. On May 11, 2012, Vale filed a petition informing about the attribution of suspensive effect to the extraordinary appeal filed in the writ of mandamus no. 0002937-09.2003.4.02.5101 due to preliminary order request filed in the (items 1 and 1.1 above) and requesting suspension of the enforcement, which was granted on the decision on May 17, 2012. On May 22, 2012, Vale filed an appeal (motion for clarification), which was accepted to clarify that the enforcement will remain suspended until notice of the final judgment of the extraordinary appeal filed by Vale (item 1 above). On December 18, 2013, Vale filed the waiver petition for purposes of adhering to REFIS. On July 22, 2014, the National Treasury requested suspension of the claim for sixty days to accompany the regularity of the payment. On September 3, 2014, the decision was issued determining the suspension of the claim until the end of the payment, and the National Treasury represented being aware on September 25, 2014.
Probability of loss	Not applicable, as the debt has terminated upon adherence to REFIS
Analysis of impact in case of loss/Reasons for the importance of the claim to the Company	Not applicable, as the debt has terminated upon adherence to REFIS

Table of Contents

5.5) Development of Administrative Claim no. 12897.000023/2010-36: Writ of mandamus no. 35681-31.2012.4.01.3400

Court	1st Tax Collection Court of the Federal District
Instance	1st federal instance
Date of filing	07/13/2012
Parties to the claim	Vale (Defendant) and National Tax Authority (Plaintiff)
Values, assets or rights involved	Not applicable
Main factors	On July 13, 2012, Vale filed a writ of mandamus to annul the measure taken by the President of the 3rd Chamber of the 1st CARF Section, which ordered the early dismissal of administrative process no. 12897.000.023/2019-36. On July 19, 2012, a decision denied the injunction that had not been requested by the Company. Vale filed a petition for reconsideration, in an attempt to correct the decision that, by mistake, rejected an alleged request of preliminary order which was not even made. However, the request was denied. In view of this decision on August 22, 2012, Vale filed an appeal, which was not granted. On July 8, 2013, the decision was published determining the claim was inapplicable and extinguishing the suit. Vale filed an appeal (motion for stay) and, after submission of an opinion by the Federal Prosecution Office, the files were remitted to the judge s office. On July 8, 2013, an unfavorable decision was issued, and on July 25, 2013, Vale filed an appeal. Files were received by the Federal Regional Court on October 18, 2013 and we are waiting the judgment on the petition notifying adherence to REFIS. After redistribution of the claim to Justice Ângela Catão, the National Treasury filed a petition on December 17, 2014 agreeing with the dismissal requested by Vale. On February 26, 2015, the decision approving the dismissal was published. On March 27, 2015, the term for appeal terminated and files were returned to the origin. Dismissed on May 4, 2015.
Probability of loss	Not applicable, as the debt has terminated upon adherence to REFIS
Analysis of impact in case of loss/Reasons for the importance of the claim to the Company	Not applicable, as the debt has terminated upon adherence to REFIS

Table of Contents

6) Administrative Proceeding no. 16682.721173/2013-04

Court	Office of Large Taxpayers DEMAC / RJ
Instance	2nd Administrative Instance
Date of filing	11/14/2013
Parties to the claim	Federal Revenue (plaintiff) and Vale (defendant)
Values, assets or rights involved	Initial amount of R$ 1.1 billion, but after the first instance decision it was adjusted to R$ 282 million (On December 2015).
Main factors	On November 14, 2013, the Office for Large Taxpayers body of the Federal Tax Authority filed an Act of Infringement to collect a fine due to alleged omissions and errors in data presented in magnetic files, related to operations carried out in calendar years 2008, 2009, and 2010. Magnetic files were presented to prove the relation between entrance and exit tax documents supporting the PIS and COFINS credit operation requested in the refund claim On December 13, 2013, Vale submitted its defense (impugnation), based on the following arguments: (i) the fine was applied in a wrong way; (ii) this is an alleged continuous infringement, which would cause reduction to the fine; (iii) infringement against the principles of proportionality and reasonability; (iv) contradiction between the checking term and the fiscal statement generating the act of infringement and decisions regarding claimed PIS and COFINS credits, (v) impossibility to apply a fine due to insufficient description of goods; and (vi) mistakes made by the supervision, while calculating gross income. On December 16, 2013, the files were forwarded to the Judgment Unit of the Federal Revenue Office of Brazil, in Ribeirão Preto SP. On June 13, 2014, the objection was judged and granted partially, to reduce the fine percentage over the value of the operations from 1 to 0.2%. Vale filed an Appeal and a Voluntary Appeal and both appeals are pending judgment by CARF.
Probability of loss	Possible.
Analysis of impact in case of loss/Reasons for the importance of the claim to the Company	In the event of an unfavorable decision, Vale can discussed the un-due fine in the judicial phase.
Notes	Resulting from MPF (Fiscal Procedure Order) no. 0718500.2012.0059

7) Administrative Proceeding no. 16682.721227/2013-23

Court	Office of Large Taxpayers DEMAC / RJ
Instance	1st Administrative Instance
Date of filing	11/14/2013
Parties to the claim	Federal Revenue (plaintiff) and Vale (defendant)

Table of Contents

Values, assets or rights involved	The case was closed in June 2015.
Main factors	On November 14, 2013, the Office for Large Taxpayers body of the Federal Tax Authority filed an Act of Infringement to collect a 50% fine over a declined claim related to PIS and COFINS credit refund linked to exporting operations in the period between the first quarter 2008 and the fourth quarter 2010. On December 13, 2013, Vale submitted its defense (impugnation), based on the following arguments: (i) lack of final credit creation, (ii) controversial case law regarding the concept of input for purposes of PIS and COFINS credit and difficulties faced by the Company regarding its right to credit and compensations applied; (iii) lack of proportionality in the fine; (iv) fine applied separately, as a means to threaten the taxpayer. On December 16, 2013, the files were forwarded to the Judgment Unit of the Federal Revenue Office of Brazil, in Ribeirão Preto SP. On March 21, 2014, the files were forwarded to the Guiding and Tax Assessment Division of the Office for Large Taxpayers of the Federal Revenue of Brazil in Rio de Janeiro - DEMAC/RJ, where they wait to be appreciated. On July 3, 2014, Vale was notified about the decision that judged the objection inapplicable and on August 1, 2014, Vale filed an appeal. This appeal was fully granted to cancel the collection, in a decision notified to the company on January 23, 2015. Retroactive effects of MP 656/14, current at the time, was applied as the MP revoked the fine of 50% over the amount of the credit object of the request of refund that was not granted. The legal term that no longer defines as infringement the factual hypothesis described in the claim determines cancellation of the punishment applied before. The case was duly dismissed on February 10, 2015.
Probability of loss	Process ended upon decision fully favorable to the Company
Analysis of impact in case of loss/Reasons for the importance of the claim to the Company	Not applicable.
Notes	Derived from MPF (Fiscal Procedure Order) nº 0718500.2012.00599

8) Motion for Annulment of Decision # 2006.020.1001869-2

Court	Superior Court of Justice and Federal Supreme Court
Instance	3rd Instance
Date of filing	20/02/2006
Parties to the claim	Federal Union (plaintiff) and Vale (defendant)
Values, assets or rights involved	R$ 5.775 billion (US$ 1.479 billion) on December 31, 2015

Table of Contents

Main factors	This is a motion for the annulment of the decision that ordered the collection of CSLL using IRPJ as basis of calculation. In 2005, a decision was handed down by the Supreme Court granting to Vale the right to deduct the amounts paid as social contributions on net profits (CSLL) from the basis of income tax calculation. In 2006 the Treasury Department s Prosecution Office filed a motion to for the annulment of decision in an attempt to annul the 2004 decision. Both the Federal Court of Rio de Janeiro and the Federal Regional Court of the Second region denied the motion. The Treasury Department s Prosecution Office appealed to the Superior Court of Justice (STJ) and to the Federal Supreme Court (STF). After the Treasury Department s Special Appeal was denied, an internal appeal of the court was filed. This, in turn, was granted, which prompted Vale to file an internal appeal of the court, currently pending decision.
Probability of loss	Possible
Analysis of impact in case of loss/Reasons for the importance of the claim to the Company	If the Motion for Annulment is granted, the amount to be collected will depend on the terms and scope of the final decision.

(iii) Civil

The tables below present a description of individual civil nature processes considered relevant to the business of the company and/or its subsidiaries filed until December 31, 2015. For further information on the relevant cases filed after said date, see item 4.7 of this Reference Form.

1) Claim no. 0063023-34.2008.8.19.0001

Jurisdiction	41st Civil Court of the Court of Justice of Rio de Janeiro
Instance	1st Instance
Date of filing	03/17/2008
Parties in the suit	Vale (plaintiff) and Movimento dos Sem Terra (MST) (defendant)
Amounts, goods or rights involved	Protection of the company s assets and guarantee of its operations
Main facts	Vale filed a suit with a request for anticipated relief obliging the defendant to cease attacks, violent acts or incitements which cause the operational stoppage of the company by the MST. The claim for anticipated relief was granted, establishing that the MST must refrain from such acts. The MST did not comply with the decision,

Table of Contents

	reason why Vale requested an increase in the established fine in the event of noncompliance, which was granted by the court. In 2012, the parties initiated new efforts to find a possible solution for this case. On June 6, 2015, a decision was published determining that the parties should express opinion regarding a possible interest in reaching a settlement. The parties are no longer allowed to file motion to suspend the process. The discovery phase has started. Due to the recent case of noncompliance with the legal decision that gave rise to the provisional protection, Vale requested new application and increase in the amount of the previously established fine.
Chances of loss	Remote
Analysis of impact in the case of losing the suit/ Reasons for importance for the Company	The lawsuit was initiated in order to ensure the protection of the assets of the company and its operational activities. A possible unfavorable decision can increase the exposure of the company to MST attacks.

2) Claim no. 0015963-69.2006.4025101

Jurisdiction	7th Specialized Panel of the Federal Circuit Court of Appeals of the 2nd Region (Court of Origin: 30th Court of the Federal Court of Rio de Janeiro)
Instance	2nd Instance
Date of filing	08/18/2006
Parties in the suit	Federal Rail Network (Rede Ferroviária Federal S.A.), succeeded by the Federal Union (plaintiff) and Vale (defendant)
Amounts, goods or rights involved	Approximately R$ 4.1 billion (December 2015)
Main facts	The plaintiff filed a claim against the Company to receive an indemnity claiming that it suffered losses arising out of contractual default on the part of Vale related to the failure to perform railway transposition in the city of Belo Horizonte. The parties have reached a settlement, through which the construction costs of the new railroad segment will be offset from an eventual conviction of Vale, if any, if the claim is judged in favor of the Federal Government. This agreement was legally approved. On June 25, 2012, a sentence rendered the lawsuit unfounded. In appeal, on February 24, 2016, the Federal Regional Court confirmed the decision reached by the federal judge in June 2012.
Chances of loss	Remote

Table of Contents

Analysis of impact in the case of losing the suit/ Reasons for importance for the Company	Any unfavorable decision could generate a financial loss for the company, in the light of the amounts involved.

3) Claim no. 0009362-71.1997.4.02.5001

Jurisdiction	5th Panel of the Federal Circuit Court of Appeals of the 2nd Region
Instance	2nd Instance
Date of filing	11/10/1997
Parties in the suit	Public Prosecutor Espírito Santo (plaintiff) and Federal Union, Gerdau, Açominas S.A., Companhia Siderúrgica de Tubarão, Usinas Siderúrgicas de Minas Gerais S.A., Vale, Odacir Klein, Luis Andre Rico Vicente, Jorge Eduardo Brada Donato, José Armando Figueiredo Campos, Rinaldo Campos Soares, João Jackson Amaral, Claudio José Anchieta de Carvalho Borges, Ivo Costa Serra and Companhia Docas do Espírito Santo - CODESA (defendants)
Amounts, goods or rights involved	Incalculable amount application for annulment of the concession contract for use of port terminals for the Tubarão Complex.
Main facts	This is a Public Civil Action which aims to annul the authorization by which Vale and some of the other defendants operate the Port Terminal at Praia Mole, in the State of Espírito Santo. In November 2007, after 10 years of conducting the proceedings, there was a decision judging the requests to be inapplicable and recognizing the validity of concession contracts that allow exploitation of port terminals located in Praia Mole. On July 3, 2012, the decision was upheld by the Federal Circuit Court of Appeals of the 2nd Region (TRF2) when the appeal filed by the Prosecutor s office was heard, filed against the decision by the TRF2, on October 23, 2012, special (STJ) and extraordinary (STF) appeals. Awaiting judgment of special appeal filed before the STJ.
Chances of loss	Remote
Analysis of impact in the case of losing the suit/ Reasons why it is relevant to the Company	Incalculable amount, and it may have an impact on Vale s operation in the State of Espírito Santo.

4) Claim no. 0024892-89.2011.8.13.0570

Court	1st Civil Court of the District of Salina / MG
Instance	1st Instance
Date of filing	09/14/2011

Table of Contents

Parties in the suit	Minas Gerais State s Prosecutor (Plaintiff), Vale S.A., Minas Gerais Land Institute - ITER, Manoel da Silva Costa Junior, Evandro Carvalho, Mauro Eurípedes Rocha Mendes, Ricardo de Carvalho Rocha, Luciana Rocha Mendes, Orozino Marques de Carvalho, Adelzuith Marques Santos, Altemar Alves Ferreira, Breno Rodrigues Mendes (Defendants).
Amounts, goods or rights involved	Compensation for damages to the State of Minas Gerais in the minimum amount of R$ 200 million, civil fine in an amount of no less than R$ 600 million, plus the lands acquired by Vale.
Main facts	This is a Public Civil Action filed by the State s Prosecutor (MP) against Vale and other 10 defendants, in which the Prosecutor claimed that an organized group of people acted with the intention of illegally taking ownership of lands belonging to the State of Minas Gerais . The MP requested an injunction determining defendants unavailability, with the exception of Vale s, up to R$ 200,000,000.00, in addition to the search and seizure of tangible properties and the lifting of tax and bank secrecy. The petition was granted by the court and upheld by Minas Gerais Court of Justice. At the end, the Prosecutor petitioned the stay of all effects with consequent annulment of all agricultural title that had been issued by the ITER involving the lands located in the Municipalities of Salinas, Santa Cruz de Salinas, Padre Carvalho, Fruta de Leite, Rubelita, between January 2007 and August 2011 ; that the ITER was convicted to hire, at their own expense, a specialized company to audit all legitimate titles issued by the State of Minas Gerais, whose amount could correspond to R$ 200,000,000.00 , a civil fine in the amount of no less than R$ 600,000,000.00 , the loss of public roles and positions , the stay of political rights , and a ban from providing service or benefitting in any way from the government . Vale filed its defense (objection) on March 15, 2012, but the discovery phase had not yet started. On April 28, 2016, the case was sent to the Prosecutors Office.
Chances of loss	Possible
Analysis of impact in the case of losing the suit/ Reasons why it is relevant to the Company	Damages to the Company s image as its name is associated with land-grabbing in the Northern region of the State of Minas Gerais, and due to the annulment of acquisition and loss of amounts paid by Vale (approximately R$ 35 million)

5) Special Appeal 1.262.401 - BA

Court	Superior Court of Justice
Instance	Superior
Date of filing	08/26/2005
Parties in the suit	Interunion Capitalização S.A. (plaintiff) and Companhia Paulista de Ferro Ligas CPFL (defendant)

Table of Contents

Amounts, goods or rights involved	R$ 1,209,736,661.34 (December 2015)
Main facts	Interunion filed a collection claim against CPFL (Vale affiliate) to receive R$248,968,222.18, corresponding to 200 debentures object of the agreement that, although named Forward Purchase and Sale of Debentures , was indeed a debenture Lease Agreement an . The defense (motion for stay) filed by CPFL was rejected, causing the filing of an appeal to the Court of Justice of Bahia. While judging this appeal, the Court of Justice of Bahia sustained the rejecting decision, causing the filing of a special appeal (STJ) by CPFL. STJ accepted the special appeal by CPFL, determining extinction of the claim, understanding that Interunion failed to appropriately show the calculation performed, which is not dispensable to file a collection claim. Against the STJ decision, Interunion filed a series of appeals (motion for stay, motion of difference, interlocutory appeal and new motion for stay), which were all rejected successively. Interunion, then, filed an extraordinary appeal (addressed to the STF). Upon analysis of admissibility, the STJ understood that the appeal was not applicable, rejecting it, that is, its remittance to the STF to have analysis of the merit, under the terms in the decision published on March 10, 2014. Against this inadmissibility decision, Interunion filed an appeal (interlocutory appeal) that was sent to the STF on April 22, 2014, and where awaits judgment. The Attorney General s Office has released opinion denying the extraordinary appeal.
Chances of loss	Remote
Analysis of impact in the case of losing the suit/ Reasons why it is relevant to the Company	Eventual unfavorable decision in the process would cause financial losses to the Company.

6) 14 Civ. 3042 (RMB) AJP

Court	US Regional Court for the South District of New York
Instance	1st court
Date of filing	04/30/2014
Parties in the suit	Rio Tinto plc (plaintiff), Vale S.A., Benjamin Steinmetz, BSG Resources Limited, VBG Vale BSGR Limited, BSG Resources Guinée SARL, Frederic Cilins, Mamadie Touré and Mahmoud Thiam(rés)
Amounts, goods or rights involved	When the process was judged on November 20, 2015, the case was still in the discovery phase, therefore it is impossible to calculate related amounts.
Main facts	On April 30, 2014, Rio Tinto plc (Rio Tinto) filed a claim against Vale, BSGR and other defendants before the US Regional Court for the South District of New York, claiming violations against the U.S. Racketeer Influenced and Corrupt Organizations Act RICO

Table of Contents

	regarding the assignment of mining rights in Simandou to BSGR by the Government of Guinea and the subsequent investment by Vale in VBG. On November 20, 2016, the District Court rejected the Rio Tinto s case based on RICO with merit, and the case was dismissed.
Chances of loss	When the process was judged on November 20, 2015, the case was still in the discovery phase; therefore it is impossible to determine probability of loss.
Analysis of impact in the case of losing the suit/ Reasons why it is relevant to the Company	The case was dismissed.

7) Case # 0069758-61.2015.4.01.3400

Court	12th Federal Court of Minas Gerais
Instance	1st instance
Date of filing	12/17/2015
Parties in the suit	Federal Union, Brazilian Institute for the Environment and Renewable Natural Resources (IBAMA), Institute Chico Mendes, National Water Authority (ANA), National Department of Mining Production (DNPM), State of Minas Gerais, State Institute for Forestation (IEF), Water Management Institute of Minas Gerais (IGAM), State Foundation for the Environment (FEAM), State of Espírito Santo, State Institute for the Environment and Water Resources (IEMA) and State Agency for Water Resource (AGERH), and jointly, with the above listed plaintiffs, Plaintiffs) and Samarco, Vale, BHPB (jointly, Defendants).
Amounts, goods or rights involved	R$ 20,204,968,949.00.
Main facts	On December 17, 2015, the Federal Government filed a public civil action to ascribe to Vale, Samarco and BHPB the adoption of a series of urgent measures to obtain compensation for alleged social and environmental damages caused by the collapse of Samarco s tailings dam in the city of Mariana (Fundão Dam), and to prevent any future environmental damages. For further information on this accident, please refer to item 7.9 of this reference form. On December 18, 2015, a decision was pronounced to grant the injunction to (i) grant injunctive relief for Samarco to stop (or provide proof that it has already done so) the leak of tailings leak still present in the collapsed dam; (ii) determine that the Defendants (a) hire companies that can immediately start assessing the contamination of fish by inorganic matters and the possible risk associated with human consumption, as well as to control the proliferation of synanthropic species; (b) draw up studies and adopt measures to prevent the mud that thrown into the Rio Doce from reaching the Rio Doce lagoon system and to protect the sources of

Table of Contents

mineral water mapped by DNPM, (c) draw up mapping studies of the different resilience potential of the places affected; (iii) order Samarco make an escrow deposit in the amount of R$ 2.0 billion reais; (iv) declare the unavailable the existing concession mining licenses currently held by the Defendants; (v) grant interim relief to the Defendants so that they can provide a global social and environmental plan to recover the Rio Doce Basin and the entire degraded area; and (vi) determine that the people affected by the disaster receive assistance. In the context of said decision, a fine in the amount of R$150 thousand was set for noncompliance with each of the measured imposed on the Defendants, and a fine in the amount of R$ 1.5 million per day has been sets for delays in complying with escrow deposit obligation in the amount of R$ 2.0 billion aforementioned.

On January 7, 2016, Samarco filed a petition, whereby it requested: (i) partial reconsideration of the injunction, arguing that the measures granted needed to take into consideration the technical and procedural factors required to comply with them, under penalty of jeopardizing their purpose, because, according to Samarco, specialized companies need to be hired and social and environmental impact studies need to be conducted in order for the preliminary order to be met; (ii) the extension of the deadlines for: a) presentation of study concerning the thickness of the mud, until January 18, 2016; b) presentation of preliminary recovery plans, within 45 days; c) removal of all the mud deposited on the margins of the Rio Doce, for an undetermined time due to technical difficulties involving the matter; (iii) dismissal of the obligation to make the R$ 2.0 billion escrow deposit; (iv) reversal of the freezing of the Defendants rights to mine; and (v) acknowledgment of the impossibility to present the required plans within the originally determined deadline. Furthermore, through this petition, Samarco reiterated its request for a justification and settlement hearing and for the suspension of fine granted by the decision until the final terms of the new deadlines are determined, as requested in the petition.

On the same date, Vale also filed a petition for reconsideration of the injunction, by showing that Samarco was already adopting the necessary measures to mitigate the impact of the accident. Furthermore, it showed that the measures ordered by decision were inappropriate to the extent that they do not take into consideration the studies required to determine the measures that need to be adopted to mitigate the damages, and it also claimed that said measures should not be determined in a preliminary injunction.

Next, January 14, 2016, Vale, Samarco and BHP filed an interlocutory appeal against the decision and requested the preliminary injunction.

Table of Contents

	On February 3, 2016, Samarco, Vale and BHPB filed a petition to plead the suspension, for another 30 days, of the case and of the effects of the issued in the records, since negotiations towards a settlement had already begun. February 4, 2016, Samarco filed a petition reiterating its request for reconsideration of the decision that ordered the adoption of certain measures to prevent and mitigate damages caused by the accident, reinforcing the request that to be excused from paying bonds or making an escrow deposits, under penalty of commitment to obligations undertaken spontaneously to restore damage caused by the accident. On February 5, 2016, Samarco filed an objection arguing a lack of procedural assumptions and merit. Furthermore, Samarco argued that it was already adopting the measures sought in the injunctions voluntarily, and requested the dismissal of the initial requests. On February 10, 2016, Vale filed its objection in which it requested the dismissal of the case without merit given the Plaintiffs lack of interest to sue. Considering the chance that the case is not dismissed without merit, Vale also petitioned that the requests made in the complaint were dismissed, given the dismissal of the interim relief and of the protection measures summarily granted; in addition to the conviction of the Plaintiffs to pay attorneys costs and fees. On March 02, 2016, the Federal Government, IBAMA, ANA, DNPM, State of Minas Gerais, IEF, GIMS, FEAM, State of Espírito Santo, IEMA and AGERH signed a Legal Settlement Agreement, which was filed on March 07 for court approval. The Legal Settlement Agreement was approved by the Federal Regional Court of the 1° Region on May 5, 2016, and the motion is suspended during the period in which the obligations taken by the parties involved in the settlement are met. The Federal Prosecutors Office (MPF) filed a motion for clarification in which it questioned the jurisdiction of the Federal Regional Court of 1st Region to approve the agreement. Moreover, the MPF questioned the terms of the agreement, with respect to the adequacy of the measures set therein, as well as the legitimacy of the agreeing parties for the conclusion of the agreement. The MPF, thus, request a rehearing en banc and the suspension of the effectiveness of the decision. For additional information about the main terms and conditions of the aforementioned agreement, see item 4.7 of this Reference Form.
Chances of loss	Possible
Analysis of impact in the case of losing the suit/ Reasons	An agreement was signed between the parties in which it was agreed that programs necessary for environmental and social

Table of Contents

why it is relevant to the Company	recovery in areas affected by the accident would be implemented. For further information on this agreement, please refer to item 4.7 of this reference form.

8) Case # 0197171-92.2015.8.13.0521 (0007284-81.2016.4.01.3800)

Court	2nd Civil Court of Ponte Nova TJMG (12th Federal Court of BH)
Instance	1st instance
Date of filing	17/11/2015
Parties in the suit	Núcleo Assessoria Comunidades Atingidas Por Barragens NACAB (Plaintiff) and Samarco, Vale, BHPB (jointly, Defendants)
Amounts, goods or rights involved	R$ 100,000,000.00.
Main facts	On November 17, 2015, the Plaintiff filed a public civil action requesting, summarily, that the Defendants present and develop, in the area of the municipalities of Santa Cruz do Escalvado, Rio Doce and Barra Longa, along the rivers do Carmo and Doce (i) programs for the recovery of the areas of permanent preservation and the sources affected by the mud resulting from the rupture of Samarco s dam; and, (ii) the registration of persons affected by said rupture and respective damage, with plan for immediate social assistance plans and indemnifications. In other specific areas, the Plaintiffs demand permanent monthly monitoring and genetic population studies of the river s ichthyofauna, and an emergency recovery program is part of the request. In addition to the ratification of the preliminary orders, the Plaintiffs also request the payment of compensation to all those affected by the accident, as well as for environmental damage, in the amount of R$ 100,000,000.00. On November 18, 2015, a decision was rendered sending the case back to Federal Court, to the sub-district of Belo Horizonte. On November 23, 2015, the Plaintiff filed an interlocutory appeal with a preliminary request against the decision. It requested the revision of the first instance decision in order to keep the case in State Courts. Furthermore, the NACAB requested interim relief to force the Defendants to conduct several measures to remediate the damages caused by the accident, such as, presentation, in 30 days, of a recovery program for the ichthyofauna of the Rio Doce, Rio do Carmo and Rio Piranga in the municipalities of Santa Cruz do Escalvado, Rio Doce, Barra Longa and Ponte Nova, and the provision of social assistance to the victims of the accident, among others.

Table of Contents

	On November 26,2015, a decision was rendered postponing the examination of the preliminary order to after the Defendants brief. On December 17, 2015, an order was given by the reporter determine that an Extraordinary Session was scheduled to attempt conciliation in the TJMG. On January 7, 2016, the Union filed a petition in the case records expressing its agreement with the decision that ordered the delivery of the case records to the Federal Court, given its interest in the case. On February 3, 2016, given the Union s declared interest, the case records were sent to the 12th Federal Court, pursuant to art. 109, I of the Constitution of the Federative Republic of Brazil from 1988 (Federal Constitution).
Chances of loss	Possible.
Analysis of impact in the case of losing the suit/ Reasons why it is relevant to the Company	The value cause determined by the Plaintiff is R$ 100,000,000.00 R$, and so it is. We point out, however, that the suit is still at a very early stage, which hinders a more accurate analysis of losses in case of loss.

9) Case # 0008423-17.2016.8.13.0400 (0146085-58.2015.4.02.5101)

Court	1st Court of Mariana
Instance	1st instance
Date of filing	30/11/2015
Parties in the suit	Sohumana Sociedade Humanitária Nacional (Plaintiff) and Samarco, Vale, BHPB (jointly, Defendants)
Amounts, goods or rights involved	R$ 20,000,000,000.00.
Main facts	On November 30, 2015, the Plaintiff filed a public civil action requesting that the Defendants were sentenced to pay compensation to the victims of the accident or to their families, as well as to the municipalities, for the restoration of public assets, proportional to the effects of the accident. For further information on this accident, please refer to item 7.9 of this reference form. On November 30, 2015, a decision was rendered denying jurisdiction to hear the case to one of the courts of the State Court of Mariana (State of Minas Gerais). On December 11, 2015, Vale filed a petition requesting the reconsideration of said decision, so that, before the court files were sent to the Federal Court of Minas Gerais, the Union was summoned to express its interest in demand because, if the

Table of Contents

	Union s response was positive, the demand should be sent to federal jurisdiction, pursuant to article 109, I, of the Federal Constitution. On December 15, 2015, Sohumana filed a petition pleading the reconsideration of the decision that denied jurisdiction, requiring the court files to be sent to the Federal Courts of the State of Minas Gerais, based on the interest and legitimacy of BDNESPAR, which, as a Vale shareholder, would have an interest in demand. On December 16, 2015, a decision was rendered upholding the denial of jurisdiction, restating the absolute lack of jurisdiction of Federal Courts and the inappropriateness of summons by any stakeholder, including the Union. On March 10, 2016, the case was received by the 1st instance court of Mariana. On April 1, 2016, an order was published order requesting the regularization of the Plaintiff s procedural representation. On April 20, 2016, a sentence was published dismissing the complaint due to a lack of correct procedural representation. The case was dismissed without prejudice. Pending final decision
Chances of loss	Possible.
Analysis of impact in the case of losing the suit/ Reasons why it is relevant to the Company	Despite the virtue of the recent decision, the case was dismissed without prejudice, and the Company considers this case relevant process on account of the amount involved.

10) Case # 0426085-72.2015.8.13.0105

Court	7th Civil Court of Governador Valadares TJMG
Instance	1st instance
Date of filing	14/12/2015
Parties in the suit	MP-MG (Plaintiff) and Samarco and Vale (jointly Defendants)
Amounts, goods or rights involved	R$ 5,100,000,000.00.
Main facts	On December 14, 2015, the MP-MG filed a public civil action requesting that the Defendants are sentenced to adopt numerous measures to mitigate the impact of the collapse of the Fundão dam. The Plaintiff requests, in the preliminary interim injunction stage, under penalty of a fine in the amount of R$ 2,000,000.00, that the defendants: (i) provide and maintain measures granted in the Interim Public Civil Action # 0395595-67.2015.8.13.0105, which preceded the present demand, and, therefore, has the same object (as described below in

Table of Contents

	Comments); (ii) prepare and implement executive project for water collection, pumping and delivery stations from Rio Suaçuí Pequeno and Grande to the plants belonging to the Water and Sewage Autonomous Service (SAAE) within the maximum period of 12 months; (iii) regularly provide to the SAAE the required polymers for the treatment of the Rio Doce water until the facilities for the collection and distribution of water aforementioned are operational; (iv) install equipment for the temporary collection and distribution of water from Rio Suaçuí Pequeno or Grande to reduce collection in the Rio Doce, within at most 45 days; (v) install modular water treatment plant with a capacity for treating 120 liters per second, for collection in the Capim stream, within at most 45 days; (vi) freeze in their accounts the minimum amount of R$ 100,000,000.00; and, (vii) confirmation the injunction and compensation for collective pain and suffering in the minimum amount R$ 5,000,000,000.00. On December 17, 2015, a decision was rendered partially granting the injunction to reverse the burden of proof and ordering that the Defendants pay for the cost of monitoring the water quality of Rio Doce and the drinking water served to the people, under penalty of a fine in the amount of R$ 2,000,000.00. Compliance with the preliminary measure granted in the records of case # 0395595-67.2015.8.13.0105 was also ordered, including the order to deliver water residences, within 48 hours, as well as the presentation of a logistics plan for the delivery of water to residences, within 10 days. The MP-MG filed an interlocutory appeal against the injunction, requesting interim relief, for the adoption of preventive and emergency measures areas affected by the accident. On February 17, 2016, a decision was rendered suspending the processing of this interlocutory appeal. Therefore, the interlocutory appeal was suspended until the final decision is rendered on the record of Positive Conflict of Jurisdiction filed by Samarco, whose purpose is to solve the matter of competence of the Federal or State Courts to hear the issues pertaining to the city of Governador Valadares. The origin of the conflict is in the fact that two public civil actions address the distribution and drinkability of the water in Governador Valadares, one of which has been filed at the federal court and the other at the state court. The conflict of jurisdictions has not yet been decided. However, there is a decision to the effect that, while there is no final decision, urgent measures should be taken by the federal court.
Chances of loss	Possible.
Analysis of impact in the case of losing the suit/ Reasons	The value of the case determined by MP-MG R$ 5,100,000,000.00. We point out, however, that the case is

Table of Contents

why it is relevant to the Company	still at a very early stage, which hinders a more accurate analysis of losses in case of loss.
Notes:	Precautionary Public Civil Action # 0395595-67.2015.8.13.0105, which is preventive injunction in preparation for case # 0426085-72.2015.8.13.0105 described above. This lawsuit was filed on November 10, 2015, by MP-MG against Samarco, before the 7th Civil Court of Governador Valadares TJMG. The precautionary injunction has been suspended, by order of the Superior Court of Justice.

11) Case #10264-98.2016.4.01.3800

Court	12th Federal Court of BH (from the 2nd Circuit Court of the District of Mariana)
Instance	1st instance
Date of filing	10/12/2015
Parties in the suit	MP-MG (Plaintiff) and Samarco, Vale and BHPB (jointly, Defendants)
Amounts, goods or rights involved	R$ 2,000,000,000.00.
Main facts	On December 10, 2015, the MP-MG filed a public civil action, to request, under penalty of a fine in the amount of R$ 200,000.00 daily, that the Defendants are ordered to (i) adopt several measures to mitigate the effects of the Fundão dam s collapse; (ii) promote social communication programs on the activities performed; (iii) provide healthcare and education to those affected by the event; and (iv) provide support for the rescue of assets, animals, and others; rescue of tombstones and mortal remains from the places affected, among others. The main request aims at converting the injunction into a permanent order to allow for the full reimbursement of alleged material and pain and suffering damages incurred by individuals impacted by the accident, and the cost of a Remediation Plan, for the social and environmental recovery, given the alleged damage incurred as a consequence of the Fundão dam. The MP-MG also demands the resettlement and economic and social restructuring of impacted families, and that the effects of the decision rendered in the interim injunction stage of precautionary action # 0039891-33.2015.8.13.0400, which preceded this demand and which was granted the freezing of the R$ 300,000,000.00. On December 16, 2015, an order was given postponing the examination of the preliminary order until after the settlement hearing. On the same date, the MP-MG requested the amendment of the original complaint to include therein new demands, among which were: (i) the granting of a preliminary

Table of Contents

injunction; (ii) payment of R$ 10,000.00 as financial support to the victims; (iii) identification and reestablishment of sports groups in the affected communities as well as other leisure practices developed by those impacted; (iv) increase and pay a monetary assistance fee for the victims; (v) payment of financial aid to victims whose source of income has not been directly impacted; and, (vi) present an immediate and concrete action plan, among other measures.

On December 23, 2015 a hearing was held between the parties, approved by the judge, in which they discussed: (i) the allocation of families in rented houses, noting that, with respect to this point, Samarco mentioned that it had already spontaneously met said measure; (ii) emergency relief aid, and Samarco stated that it has already begun making minimum wage payment to each person in the family who lost their income due to the accident, plus 20% for dependent family members, in addition to the value of basic food basket per family, plus the commitment to support this monthly allowance for twelve months, under the conditions set forth in the hearing; (iii) Samarco s payment of (a) R$ 100,000.00 per family that lost loved ones in the event, and (b) R$ 10,000.00 for early compensation, per family unit, to the families who have been physically displaced, i.e. whose properties were destroyed buildings, regardless of whether they lost income from the loss of such property; (iv) Samarco s accountability in court for the amount spent on compensation and recovery of the area, by January 31, 2016. For the purposes of payment of the aforementioned sums, except for the monthly assistance aid, a permit in the amount of R$ 5,500,000.0 was issued.

On January 20, 2016, a second hearing was held between the parties, approved by the judge, in which they discussed, in addition to certain individual cases: (i) the advance payment of R$ 10,000.00 to the people affected by the accident, and Samarco has committed to pay advance indemnity in that amount as well as agreed in the previous hearing, to individuals who have lost real estate property that was not classified as their habitual home, pursuant to the terms agreed upon in the hearing; (ii) compensation for the loss of vehicles, and Samarco has committed to compensate people who lost vehicles; (iii) the release permit, in which Samarco has agreed to release R$1.0 million to carry out the previously described purposes.

On February 17, 2016, given the Union s declared interest in the case, the case records were sent to the 12th Federal Court, pursuant to art. 109, I of Constitution of the Federative Republic of Brazil (Federal Constitution). Awaiting decision.

On March 28, 2016, Vale filed an objection in which it requested the dismissal of the case without merit, given the Plaintiffs lack of interest to sue. Taking into consideration the chance that the

Table of Contents

	case is not dismissed without merit, Vale has also petitioned that the requests made in the complaint were dismissed; as well as the Plaintiffs sentence to pay attorneys costs and fees.
Chances of loss	Possible.
Analysis of impact in the case of losing the suit/ Reasons why it is relevant to the Company	The value of the case determined by MP-MG R$ 2,000,000,000.00. We point out, however, that the case is still at a very early stage, which hinders a more accurate analysis of losses in case of loss.

12) Case # 0273073-38.2015.8.13.0105

Court	5th Civil Court of Governador Valadares TJMG
Instance	1st instance
Date of filing	28/12/2015
Parties in the suit	MP-MG (Plaintiff) and Samarco, Vale, Water and Sewage Autonomous Service (SAAE , and, jointly with Samarco and Vale, Defendants)
Amounts, goods or rights involved	R$ 1,000,000.00.
Main facts	On December 23, 2015, the MP-MG filed a public civil action demanding that the Defendants are sentenced to (i) present a solid waste management plan of the water treatment plants in the municipality of Governador Valadares, with adequate final disposal of these solids; as well as (ii) to refrain from allocating, in any way, waste from water treatment in any body or in natura until the implementation of the management plan. On December 25, 2015, a decision was rendered granting the preliminary injunction sought by ordering the Defendants to present a solid waste management plan at the water treatment plants in the municipality of Governador Valadares and that they refrained from diverting waste from water treatment into any body, whether in natura or out in the open, until the implementation and operationalization of said plan, setting a daily fine form noncompliance and ordering the reversal of the burden of proof. Against this decision, Samarco and Vale filed an interlocutory appeal that was granted partial suspensive effect. January 29, 2016, Vale presented its defense claiming that it was not a legitimate party in the case, and that SAAE should be held solely responsible for the public water supply in Governador Valadares. Grounded in this, it requested the dismissal of the case, without prejudice, given the Plaintiff s lack of interest to sue. Taking into consideration the chance that the case is not dismissed without merit, Vale has also petitioned that the requests made in the

Table of Contents

	complaint were dismissed; as well as the Plaintiff s sentence to pay attorneys costs and fees.
Chances of loss	Possible.
Analysis of impact in the case of losing the suit/ Reasons why it is relevant to the Company	The Prosecution Office alleges that the accident at the Fundão dam directly impacted the water distribution in the municipality of Governador Valadares and that it intends to carry out a constant assessment of the drinkability of the water distributed to that location. The action is still in a very early stage for an assessment of impacts. Notwithstanding the foregoing, the Company also considers the case relevant on account of the matter discussed.

Table of Contents

13) Case # 1:15-cv-09539

Court	Federal Court of New York
Instance	The United States District Court for the Southern District of New York
Date of filing	12/07/2015 (First Complaint) e 04/29/2016 (Amended Complaint).
Parties in the suit	Alameda County Employees Retirement Association e Orange County Employees Retirement System (Plaintiffs) and Vale S.A., Murilo Pinto de Oliveira Ferreira, Luciano Siani Pires and Gerard Peter Poppinga (Defendants)
Amounts, goods or rights involved	The plaintiffs did not specify the amounts claimed for alleged damages.
Main facts	Vale S.A. and some of their executives were named as defendants in potential class-action suits relating to securities before the Federal Court of New York, filed by investors holding securities issued by Vales, grounded on the American federal securities laws. The lawsuits allege that Vale made false and misleading statements or omitted disclosures about the risks and dangers of operations at Samarco s Fundão dam and the adequacy of related programs and procedures. The dispute is at a very preliminary stage. On March 7, 2016, the competent judge in the potential class-action securities suits ordered the consolidation of these suits and designated lead plaintiffs and attorneys. On April 29, 2016, the plaintiffs filed a consolidated and amended complaint. The Amended Complaint claims breach of Sections 10 (b) and 20 (a) of the Securities Exchange Act of 1934. Vale intends to vigorously contest these suits and prepare a complete defense against these allegations.
Chances of loss	As a result of the preliminary nature of these cases, it is not possible to determine, at this time, a variety of reliable outcomes or estimates of potential exposure.
Analysis of impact in the case of losing the suit/ Reasons why it is relevant to the Company	Any loss may lead to financial loss and damages to the image and reputation of the Company.

(iv) Environmental

The tables below present a description of individual environmental nature processes considered relevant to the business of the company and/or its subsidiaries.

Table of Contents

1) Claim no. 0317.02.002974-8

Jurisdiction	2nd Civil Court of Itabira - Minas Gerais
Instance	1st Instance
Date of filing	09/26/1996
Parties in the suit	City of Itabira (plaintiff) and Vale (defendant)
Amounts, goods or rights involved	R$ 4,861,865,965.73 (December 2015).
Main facts	The municipality of Itabira seeks compensation for expenses that it alleges to have incurred with public services rendered as a consequence of Vale s mining activities. The case was suspended, pending judgment of a writ filed by Vale to be used in this lawsuit, so that favorable evidence produced in another lawsuit could be used (item 2 below). On January 2012, the writ was judged against Vale. However, this case remains suspended because the court in the first degree has not yet received from the Court of Justice of Minas Gerais information on the writ. After this communication, the lawsuit may resume its normal course. However, the parties filed a joint petition on March 12, 2013 requesting suspension of the suit to attempt a settlement. On March 27, 2013, the claim was suspended upon agreement between the parties. On March 27, 2014, the case was suspended by mutual agreement between the parties. However, the case was resumed when the parties failed to reach a settlement. On November 19, 2015, an order was issued request that the Municipality of Itabira to inform the judgment of the writ of mandamus. On March 2016, the Municipality of Itabira informed that the Writ of Mandamus no. 1.0000.07.465984-8/000 had been denied and summoned the appointed Expert s to provide expert evidence. The files have been awaiting order since March 31, 2016.
Chances of loss	Total amount divided into possible loss (15%) and remote loss (85%).
Analysis of impact in the case of losing the suit/ Reasons for importance for the Company	Any unfavorable decision in the lawsuit would generate great financial losses for the Company, although there is no risk of stoppage of activities.

2) Claim no. 0317.02.007032-0

Jurisdiction	1st Civil Court of Itabira - Minas Gerais
Instance	1st Instance
Date of filing	08/22/1996

Table of Contents

Parties in the suit	City of Itabira (plaintiff) and Vale (defendant)
Amounts, goods or rights involved	R$ 4,198,648,313.69 (December 2015).
Main facts	Suit filed in the municipality of Itabira, in the State of Minas Gerais, in which the plaintiff claims that the operations of the iron mines in Itabira caused environmental and social damage and requires the restoration of the site and the implementation of environmental programs in the region. Expert witnesses were used in this case, and the report issued jointly by the Brazilian Institute of the Environment and Renewable Natural Resources (IBAMA) and the State Foundation for the Environment (FEAM) was favorable to Vale. Nevertheless, the Municipality requested the production of new expert evidence, which was accepted by the judge. For this purpose, a multidisciplinary team from the Federal University of Lavras as appointed. On November 6, 2012, there was a settlement hearing in which the petition to stay the lawsuit was granted until May 6, 2013 in order to form the parties. Considering the end of the suspension, the City was invited to comment on the amount of expert examination fees.. In February 2014, the municipality of Itabira filed a statement regarding the proposal of expert fees, and it requested a reassessment of the amount of R$ 1,604,000.00, whereas the municipality may provide some inputs, such as lodging, food, and plants, maps or sketches. On May 7, 2015, an order was published determining the summons of the appointed expert to provide his statement and report the possibility of lowering the expert fees, within 10 (ten) days. On January 19, 2016, Vale filed a statement reiterating that the expert report to be drawn up therein has been requested by the municipality of Itabira, and therefore, there was no reason why the respondent company should carry the burden of their compensation, pursuant to art. 33 of the Code of Procedures. On February 15, 2016, it was certified held the deadline for the plaintiff, the municipality of Itabira, had expired without the presentation of any statements.
Chances of loss	Total amount divided into possible loss (7%) and remote loss (93%).
Analysis of impact in the case of losing the suit/ Reasons for importance for the Company	Any unfavorable decision in the lawsuit would generate great financial losses for the Company, although there is no risk of stoppage of activities.

3) Process no. 26.295.47.2012.4.3700

Jurisdiction	8th Federal Court of São Luís Maranhão
Instance	1st instance

Table of Contents

Date of filing	07/22/2012
Parties in the suit	Sociedade Maranhense de Direitos Humanos, Conselho Indigenista Missionário (CIMI), Centro de Cultura Negra do Maranhão CNN (plaintiffs) and IBAMA and VALE (defendants).
Amounts, goods or rights involved	Immeasurable
Main facts	The public civil action aims the suspension of the licensing process for the Expansion of Carajás Railroad. For that, plaintiffs claim that the environmental licenses granted by IBAMA are based on an environmental study which is insufficient to characterize globally impacts caused by the work, as well as fragmenting environmental licenses in order to uncharacterized the company s obligation for environmental compensation due in view of the enterprise. In the end, after criticisms to the required licensing model, plaintiffs claim the nullity of the process and licensing. In July 2012, the court granted a preliminary order, determining suspension of all Works and activities related to the expansion of the Carajás Railroad. Vale and IBAMA filed appeals (interlocutory appeals), aiming to reverse the decision, and filed before the Presidency of the TRF of 1st Region (DF) a claim to suspend the preliminary order, claiming that (i) the risk of serious irreversible economic losses arising out of any eventual maintenance of such preliminary decision, as well (ii) as the fact that the environmental study prepared by Vale fully complied with the terms in CONAMA RES 237, while there are no grounds for the claim regarding the serious risk of social-environmental unbalance. The suspension request was accepted by the Presidency of the TRF of the 1st Region, and the plaintiffs appealed against this decision (interlocutory), but were not successful and the decision favorable to Vale was maintained. At the first instance, Vale and IBAMA filed their defenses claiming (a) the regular nature of the licensing process, (b) the clear definition, in the study, of all diagnosis regarding the impacts on areas and communities under direct and indirect influence of the work (including traditional communities), and (c) the need to respect the competence and technical skills held by IBAMA to carry out and conclude the environmental study. In recent decision, the federal judge accepted the claim by the Federal Public Defense Office to appear as plaintiff. Vale filed an appeal (interlocutory) against this decision, aligned with the opinion by the Federal Prosecution Office (MPF), in the sense of lack of legitimacy of the Public Defense to be party in the claim. The appealed decision was sustained, and there was reestablishment of the successive term for the Prosecution Office, IBAMA and VALE to present their comments. The Prosecution Office reiterated the annulment of the Licensing and IBAMA was requested to present new information about the Railroad operation and the removal of families. After IBAMA s manifestation on August 12, 2014, the files were remitted to be analyzed by the court. The preliminary order was not

Table of Contents

	granted on September 15, 2014, and the State of Pará presented its lack of interest in the claim. On February 27, 2015 an order was published to inform the beginning of the term applicable to Vale to present its comments on the licensing process filed by IBAMA. On March 30, 2015, Vale s motion was filed. Waiting for decision. On March 17, 2016, the production of expert evidence requested by Vale was granted and it presented technical issues and assistants on April 5, 2016.
Chances of loss	Remote.
Analysis of impact in the case of losing the suit/ Reasons for importance for the Company	Eventual decision unfavorable to Vale, may compromise the licensing process for the expansion of EFC, with impacts on logistic operations of VALE to deploy the production transportation plan for Project S11D.

4) Process no. 0021337-5220114.01.3700

Jurisdiction	8th Federal Court of São Luís Maranhão
Instance	1st instance
Date of filing	11/04/2011
Parties in the suit	Federal Prosecution Office (plaintiff) and IBAMA and VALE (defendants)
Amounts, goods or rights involved	Immeasurable
Main facts	Public Civil Action that aims to impose onto Vale and to IBAMA the duty of redoing part of the environmental study that was used as basis to the licensing process for the expansion of Carajás Railroad (EFC), due to alleged failure of indication of impacts caused by the expansion of EFC onto quilombolas communities located close to segment 20 of the EFC, in Maranhão (communities of Monge Belo and Santa Rosa dos Pretos). On March 8, 2012, the Court approved the agreement entered by and between the parties, under which, Vale agreed upon: (i) transfer the amount of R$700,000.00, to be managed by the Cultural Foundation Palmares and applied in the structural and cultural development of communities which protection is the object of this claim; (ii) carry out environmental studies of environmental recovery actions with hydric bodies located in the inside of quilombolas lands of Monge Belo and Santa Rosa dos Pretos; (iii) build, subsequently, four bridges in the inside of segment 20 of EFC, the first period is of 18 months, starting on the date of licensing by IBAMA, and the other periods are 12 months each, starting from the end of the first period; (iv) alter all the level passages related to each bridge to be built, signaling and lighting the passages to be used by the communities; (v) place fences on both sides of the EFC at the segment 20, protecting the areas used as crossing by people and animals. On July 2013, Vale filed a petition

Table of Contents

	claiming that all its obligations, disregarding actions by IBAMA and/or Fundação Cultural Palmares have been complied with. In December 2013, the Prosecution Office filed a brief stating the non-compliance with obligations assumed under the agreement. In view of this brief by the MPF, the court requested that Instituto Nacional de Colonização e Reforma Agrária (INCRA), IBAMA, Fundação Cultural Palmares, and Vale should prove compliance with the obligations, determining that Vale should comply with such obligations within sixty days. Vale was ordered to present justification within thirty days for the change in the schedule as provided for the construction of bridges for vehicles and people. Thus, in October 2014, Vale presented a petition informing compliance with items (i), (ii), (iv) and (v) and informing the new schedule to build the bridge, object of this agreement. After comments by MPF, as described above, the files were submitted to the judge. Decision pending.
Chances of loss	Probable (On December 31, 2015). Although, on December 31, 2015, the probable classification, due to delays in the chronogram of the overpass, had no provisioned amounts at that time, since a potential file applicable in connection with the referred delay, but still contingent on legal decision, had not yet been pre-determined in the agreement.
Analysis of impact in the case of losing the suit/ Reasons for importance for the Company	Despite of an agreement signed in this claim, under which the Company agrees upon several obligations related to the social-economic aspects of the area, delays in complying with Vale s obligations could motivate judicial decisions that could convert the obligations into fines. We point out that, on December 31, 2015, the case had a neutral financial nature. Therefore, no amount has been provisioned. An agreement was reached in this case (obligation to do so), reason why the financial nature was changed to neutral. The probable loss is maintained but without contingencies.
Notes:	However, given the foreseen delay in the delivering the second overpass, the possible classification of the case was changed on May 31, 2016 due to third parties, not to Vale.

5) Case # 0002505-76.2015.4.02.5001

Jurisdiction	First Federal Court Criminal Justice Federal do Espírito Santo
Instance	1st instance
Date of filing	12/4/2015

Table of Contents

Parties in the suit	Brazilian Federal Police (plaintiff) and Vale (defendant)
Amounts, goods or rights involved	Suspension of Vale activities at the Pier II and Pier de Carvão of the Tubarão Port, due to potential environmental damage resulting from the iron ore drop and emissions of particulate material into the atmosphere and into the sea area surrounding the Pier II and Pier do Carvão.
Main facts	On January 21, 2016, the Federal Court of Espírito Santo ordered the suspension of the Company s activities at the Pier II and Pier do Carvão from at the Tubarão Port due to potential environmental damages resulting from the iron ore drops and emissions of particulate material into the atmosphere and into the sea area around Pier II and Pier do Carvão. Vale s operations at Pier II and Pier do Carvão at the Tubarão Port Coal were shut down for four days when the Federal Regional Court (TRF) of the Second Region suspend the effects of the injunction. The TRF granted to Vale 60 days to implement measures to monitor, control and mitigate the iron ore drop and the emission of particulate materials into the sea and into the atmosphere. This 60-day period expired on March 25, 2016, and the Company believes that it is in compliance with the requirements set forth by the TRF. As part of this suit, the Company may have to meet certain additional requirements to prevent or mitigate the iron ore drop and the emissions of particulate materials into the sea and into the atmosphere.
Chances of loss	Remote
Analysis of impact in the case of losing the suit/Reasons for importance for the Company	In case of loss, the Company will suffer significant monetary losses and damages to its image.

6) Case # 0002383-85.2012.4.01.3905

Jurisdiction	Federal Court of subsection Redemption judicial
Instance	1st instance
Date of filing	05/28/2012
Parties in the suit	Federal Prosecution Services (MPF) (plaintiff); Indigenous Association of Kakarekre for the Defense of the Xikrin people of Djudjeko, Indigenous Association of Tuto Pombo, Indigenous Association of Porekro for the Defense of the Xikrin people of Catete, Indigenous Association of Pore Kayapo, Indigenous Association of Baypra for the Defense of the Xikrin people of Oodja (Assistant Co-plaintiffs); Vale, National Foundation for Indigenous People (FUNAI) and the State of Pará (Defendants).
Amounts, goods or rights involved	The value is undefined, as it is a case involving (i) indemnity amount contingent on the opinion of an expert to set it, and (ii) the request to shut down the Company s nickel operations in Onça Puma, in the State of Pará.
Main facts	In 2012, the MPF filed a Public Civil Action (ACP) against Vale, the State of Pará and FUNAI, seeking the suspension of the Company s nickel operations at the Onça Puma mine in the State of Pará due to the alleged impact on the indigenous communities Xikrin and Kayapo located near the mining site. The MPF argues (i) that the Company s operations were contaminating the waters of the Cateté River which runs through indigenous land (IT) Xikin; (ii) that the Company failed to meet certain conditions from the environmental license required by the Onça Puma mine development; and, (iii) that the State of Pará should not have granted an environmental license to this development. In addition, the MPF pleaded the payment of compensation in favor of indigenous and monthly deposits in the amount of R$ 1.0 million until a final decision is reached in the suit, on

behalf of the indigenous villages of Xikrin and Kayapo.

On October 18, 2012, the court did not recognize the urgency of the requested injunction petitioned in the ACP, and denied the MPF s demand for said injunction.

On May 25, 2015, three years after the injunction was denied, the MPF filed a request for the reconsideration of the Redenção court decision claiming that the Onça Puma mine operations were polluting the Cateté river, causing damage to the health of indigenous tribes and, as a result, the MPF reiterated the demands for the shutdown of the project and for the monthly compensation payment in the amount of R$ 1.0 million on behalf of indigenous villages of Xikrin and Kayapo.

On June 2, 2015, the court of Redenção partially accepted the MPF s request determining Vale to deposit the monthly sum of about

Table of Contents

R$ 400,000, to be received and divided proportionally among the members of the TI Xikrin villages.

In June 2015, Vale and indigenous associations appealed the injunction. Vale objected to the monthly budget payment obligation and indigenous associations, in turn, objected the monthly amount set forth by the court (R$ 400,000).

On June 25, 2015, the appeal s judge Vale s request for denied the Vale s injunction and granted the indigenous associations injunction, increasing the amount of the monthly deposit to R$ 1.7 million, to be received and divided proportionally among villages that are members of the TI Xikrin.

On July 9, 2015, Vale filed a Writ of Mandamus (MS) addressed to the President of TRF 1st Region (TRF 1), requesting the suspension of the injunction effects that increased the amount of the monthly deposit.

Due to delays in the proposed MS analysis and the possibility of running over the deadline for compliance with the injunction granted by the Federal Judge, Vale deposited in court the amount of R$ 1.7 million, which was determined by injunction, and this amount has already been released to the indigenous people.

On July 20, 2015, the Federal Judge of the TRF accepted the Vale s MS and granted an injunction suspending the effects of the decision that increased the deposit amount and the actual obligation to make the deposits.

On July 14, 2015, the MPF filed another appeal seeking to increase the monthly deposit obligation initially set forth by the Redenção judge, requiring Vale to make monthly deposit in the amount of R$ 1.0 million per village affected by the project, as well as to immediately stop the Onca Puma mine project. A new decision, the same Judge who granted the first increase fully accepted the MPF s request.

Vale filed on August 21, 2015, a new Writ of Mandamus (MS) addressed to the President of the TRF 1, objecting to this new injunction to increase the compensation and to suspend the development s operations.

Due to delays in the examination of the MS and the possibility of running over the deadline for compliance with the injunction granted by the Federal Judge, Vale deposited in court the amount of R$ 7.0 million, R$ 3.0 million of which were meant for the villages of from TI Xikrin, and R$ 4.0 million would be allocated to the villages from the TI Kayapo.

On August 28, 2015, Federal Judge once again granted Vale s MS and an injunction in favor of the Company ordering the suspension of the effects of the order to shut down the Onca Puma mine and the (second) order to increase the monthly amount to be deposited.

Table of Contents

On September 16, 2015, due to this new decision on the MS, the MPF filed a petition requesting the suspension of the writ of mandamus to the President of the STJ, citing risk to public order and health. After collecting the statements from all stakeholders (Vale, State of Pará, and the Indigenous Associations), the President of the STJ recognized the risks claimed by the MPF and granted an injunction ordering the suspension of the effects of the injunction granted to Vale in MS, ordering that the Onca Puma mine is shut down again, and the resumption of monthly deposits (R$ 7 million).

Due to delays in the analysis of the filed appeal and the possibility of running over the deadline for compliance with the injunction, Vale deposited in court the amount of R $7.3 million.

On October 29, 2015, the State of Pará filed an appeal requesting the suspension of the injunction to the President of the STJ, claiming that the shutdown of the venture would bring damages to the state. The President of the STJ ordered that all stakeholders made a statement about the State of Pará s request. This time, Vale added the information presented by the State.

On November 11, 2015, Vale filed a statement addressed to the President of the STF, clarifying that (i) as determined by FUNAI, the implementation of impact mitigation and compensation actions started to be conducted through Basic Environmental Plans (PBAs) and not through management plans; (ii) the PBA Kayapó was implemented and the actions set therein were fully implemented; and, (iii) the PBA Xikrin was partially implemented because, to date, Vale had not been authorized to join the TI to perform the PBA s actions.

On November 12, 2015, Vale and the state of Pará appealed against this decision to the Full STJ and, simultaneously, filed a petition to the President of the STJ not to release the amounts until a final decision was reached regarding the appeals.

On December 16, 2015, the STF suspended the effects of the injunction granted by the STJ, allowing the operation of the Onca Puma mine and ordering the implementation, within 120 days, of the Management Plan and other mitigation and compensatory measures for the impacts caused by the Onça Puma in TIs.

During 120-day term, Vale held a series of meetings with the MPF and with indigenous peoples, in order to facilitate access to the TI to perform the PBA s actions, and it created, and then increased, a proposal for economic compensation. Nevertheless, the indigenous people kept on denying access to the TIs and did not accept the proposal.

Due to the lapse of time without the fulfillment of certain actions ordered by the preliminary decision granted by the President of STF, the Plaintiffs filed a petition for the release of the funds deposited in court (R$ 14.3 million) on the grounds that Vale had not shown an interest in complying with the decision.

Table of Contents

	In decision rendered in April 2016, the President of the STF understood that the decision to release or not the deposits fell under the jurisdiction of the court of Redenção. The parties filed responses to this decision. On May 5, 2016, Vale filed an objection to the claims and requested that the amounts were kept by the court. On May 18, 2016, the Federal Court of Redenção partially granted Vale s request and denied the Associations and MPF s petition, keeping the frozen funds deposited in court.
Chances of loss	Possible loss, given that the process is still in the discovery phase, and the technical assessment required by the parties has not yet been conducted.
Analysis of impact in the case of losing the suit/Reasons for importance for the Company	Possibility of significant financial impact in the case of a decision unfavorable to Vale and if the Onca Puma mine is shut down.

4.3.1. - Indicate the amount provisioned, if any, for the cases described in item 4.3

On December 31, 2015, the total amount provisioned, taking into considering the individually relevance cases described in subsections (i), (ii), (iii), and (iv) of item 4.3 above, was R$ 231.0 thousand.

(i) Labor

On December 31, 2015, the total amount provisioned, taking into considering the labor suits described in subsection (i) of item 4.3 above, was R$ 231.0 thousand.

(ii) Tax

On December 31, 2015, no amounts associated with the cases listed in subsection (ii) of item 4.3 above were provisioned.

(iii) Civil

On December 31, 2015, no amounts associated with the civil suits described in subsection (iii) of item 4.3 above were provisioned.

(iv) Environmental

On December 31, 2015, no amounts had been provisioned for the environmental processes described in subsection (iv) of item 4.3 above, since these suits (i) were classified as having a remote or possible loss, or (ii) although classified as having a probable loss, no amounts were provisioned pursuant to the justification found in table 4 of 4.3 item (iv) above.

4.4 In-court, administrative or arbitration proceedings that are not confidential involving managers, former managers, controllers, former controllers or investors

The following tables show an individual description of the non-confidential administrative or arbitral cases whose opposing parties are Company s managers, former managers, controllers, former controllers, or investors.

Table of Contents

1) Motion to Disagree in Special Appeal no. 1.310.535

Original Claim no. 005530-40.2007.8.19.0001

Jurisdiction	Appeals: Motion to Disagree before the 2nd Section of the Special Court of the STJ and Extraordinary Appeal before the STF (Original Court 48th Civil Court of Rio de Janeiro)
Instance	Higher Court
Date of filing	05/09/2007
Parties in the suit	Petros (plaintiff) and Vale (defendant)
Amounts, goods or rights involved	Vale was requested to make an escrow deposit as payment on March 8, 2010 in the amount of R$ 346,773,910.20, due to the temporary collection claim filed by Petros. On August 23, 2011, Petros, to increase the amount deposited in escrow, presented a surety bond issued by Banco Bradesco in the amount of R$ 497.0 million. On April 23, 2015, a decision favorable to Petrobras was reached. It authorized the exclusion of the surety bond on July 24, 2015.
Main facts	Petros filed an action claiming the receipt of purges made because of inflation arising from the economic plans called Plano Verão and Plano Collor on amounts paid under forward contracts for buying and selling gold concluded with Vale from 1988. These contracts were paid up and settled by Petros at that time. However, Petros started legal proceedings aimed at applying the decision on a matter taken in the STJ for savings accounts books, to contracts concluded with Vale. Vale maintains that the inflationary adjustments are not due. However, the decisions were unfavorable to the Company. An appeal was filed against this decision, but the appeal was not granted.. The special appeal filed by Vale was rejected by the STJ. Currently, there is an appeal (interlocutory appeal) filed by the Company waiting to be judged by the STJ. The preliminary decision, have been judged unsuccessfully. Vale was determined to pay R$ 346,773,910.20 claimed by PETROS in the lawsuit. To increase the amount deposited in escrow, Petros presented a bank surety bond in the amount of R$ 497 million. Neither the special nor the extraordinary appeals filed by Vale were successful. Final decision has been pronounced in this case.
Chances of loss	Probable
Analysis of impact in the case of losing the suit	The decision unfavorable to Vale became final (res judicata), and the payment in the amount of R$ 346,773,910.20 made in escrow. . The Company shall make no additional disbursements or provisions. Additionally, such a decision can open a precedent for similar judgments in other cases where future contracts for sale of gold are in dispute (total of 12 cases, including this one. For more details see item 4.6 of this Reference Form).

Table of Contents

2) Claim no. 0079940-46.2010.4.01.3800

Jurisdiction	18th Federal Court of Belo Horizonte Minas Gerais
Instance	1st Instance
Date of filing	02/18/2004
Parties in the suit	Transger S.A. (plaintiff) and Ferrovia Centro Atlântica S.A., Mineração Tacumã Ltda, KRJ Participações S.A., CPP Participações S.A., Carmo Administração e Participações Ltda, Fundação Vale do Rio Doce de Seguridade Social - Valia and Companhia Siderúrgica Nacional - CSN (defendants)
Amounts, goods or rights involved	Incalculable Request for annulment of the General Meeting.
Main facts	The plaintiff brought a lawsuit requesting additionally to compensation, annulment of the General Meeting authorizing the capital increase of Ferrovia Centro-Atlântica S.A. (FCA) in 2003 on the grounds of alleged practice of abusive acts by FCA s controlling group. The decision that judged the action to be well founded, was annulled by the Court of Justice of Minas Gerais, and determined the production of new expert evidence. During the preparation of the new expert evidence, the National Agency of Land Carriage (ANTT), according to the initials in Portuguese) stated its interest in participating in the case and, for this reason, the jurisdiction in this procedure was transferred to the Federal Justice of Minas Gerais. The judge of the 18th Federal Court of Belo Horizonte issued a decision recognizing the jurisdiction of the Federal Courts to judge the case because of ANTT s interest in the maintenance of the concession and accurateness of the administrative act. ANTT appeared in the files, ratifying its understanding regarding the validity of the act authorizing increase of FCA s capital stock. The judge pronounced her decision ending the procedural instruction and started the period for final claims. All parties were summoned to present final arguments, including ANTT, without prejudice to the filing of appeals (retained motions for clarification and interlocutory appeals), given that the decision declared the procedural instructions concluded. New decisions were pronounced and this understanding was maintained. Additionally, we are currently awaiting examination of the motions for clarification files by the opposing party in face of the decision reached by the Judge on March 16, 2016, indicating that the issue of the active joinder of defendants required for two shareholders that are not cited

Table of Contents

	in the lawsuit (Sérgio Feijão e Associação da Preservação da Memória Ferroviária) has already been at default.
Chances of loss	Possible.
Analysis of impact in the case of losing the suit / Relevance to the Company	Incalculable amount. The case is relevant because of the annulment of the Extraordinary General Meeting that authorized the FCA s capital increase in 2003.

3. Motion in Special Appeal no. 271.951 (Original Procedure No. 0529364272010.8.13.0145). The original case was redistributed to the 2nd Corporate Court of Rio de Janeiro and was given the no. 0203958-80.2015.8.19.0001

Jurisdiction	4th Panel of the Superior Court of Justice STJ Original Court - 7th Civil Court of Juiz de Fora/Minas Gerais
Instance	Superior
Date of filing	October 12, 2012 (original date August 20, 2010)
Parties in the suit	SUDFER (plaintiff), and MRS Logística S.A., Companhia Siderúrgica Nacional S.A., Minerações Brasileiras Reunidas S.A. - MBR, Usiminas Usinas Siderúrgicas de Minas Gerais, Gerdau S.A. and Vale S.A. (defendants)
Amounts, goods or rights involved	Incalculable
Main facts	Repair claim filed by Clube Sudfer, claiming that the controlling shareholders of MRS Logística S.A. (MRS), including Vale, have been acting abusing power, causing direct damages to MRS and, indirectly, to the minor shareholders. The plaintiff claims that ever since privatization of the former Rede Ferroviária Federal S.A. (RFFSA), when the exploration concession for the Southeastern Portion was granted to MRS, which controlling shareholders at the time were (and still are) clients of the railroad, they have adopted a tariff policy in their own favor and in non-egalitarian terms, because, for usual clients, in average, the fee was half (50%) of the maximum fee authorized by the National Agency for Land Transportation (ANTT), while non-usual clients were charged with the maximum tariff. The plaintiff claims that adoption of this tariff policy had caused damage to MRS, and the company failed to have better gains charging a smaller fee from usual clients and supposedly caused indirect loss to the minor shareholders, because they have not received dividends. Based on such claims, the plaintiff asked for: (i) condemnation of the controlling shareholders to pay any and all direct material damages imposed on MRS until the improper practice has been stopped, due to (i) the unfair reduction of the profits of the company, (ii) the non-payment of dividends, and (iii) the payment of less dividends in view of the reduced tariffs for

Table of Contents

	controlling shareholders; (ii) controlling shareholders to be obliged to contract with MRS under igualitarian terms , considering the maximum level of the fee authorized by the Competent Authority; and (iii) condemnation of defendants to pay the 5% premium provided for in article 246, § 2 in Law 6.404, dated December 15, 1976, as well as winning fees. In January 2011, Vale and MBR presented their defenses. With the reply, exceptions were presented claiming inapplicability and impugnation of the amount of the cause. The inapplicability exception filed by Vale was rejected. Against this decision, Vale filed a bill of review, which suspension effect was granted until judgment. In January 2012, the appeal was granted to determine the competence transfer to the city of Rio de Janeiro. Against this decision, Clube Sudfer filed a Special Appeal, which was not accepted by the court of origin. Unhappy, the investment club filed a Special Appeal before the STJ, which was not recognized for being untimely. Clube filed an appeal against this decision, to which Vale and the other parties have objected. The court s internal appeal has been waiting to be judged at the STJ since May 2014. The case has already been distributed to the Rio de Janeiro Court, and it is being heard before the 2nd Corporate Court of the State of Rio de Janeiro, where it was numbered 0203958-80.2015.8.19.0001. After the reply was filed and the parties made their statements regarding the evidence, the court summoned CVM to provide statement. After CVM s statement, Vale filed a petition, on February 4, 2016, reiterating the defense arguments, which were ratified in CVM s response. On March 7, 2016, a curative act was published (i) focusing as the point of dispute abuse of power by the controlling companies given the difference in service charges to non-preferred clients and the preferred clients, who are members of the Company s controlling group; (ii) dismissing the injunction filed by the defendants; (iii) dismissing the production of oral evidence requested by the opposing party; (iv) granting the production of additional probative evidence requested by Vale and other parties. Against this decision, motions for clarification were filed and are still pending. In motions for clarification, the court s omission to examine the incidents grounding the case was raised.
Chances of loss	Possible
Analysis of impact in the case of losing the suit / Relevance to the Company	Any unfavorable decision in the lawsuit would generate financial losses for the Company and would damage its image.

Table of Contents

4) Special Appeal no. 1363585 (Original Procedure No. 0497166342010.8.13.0145). The original case was redistributed to the 2nd Corporate Court of Rio de Janeiro and was given the no. 0354058-47.2015.8.19.0001

Jurisdiction	4th Panel of the Superior Court of Justice STJ Original Court - 8th Civil Court of Juiz de Fora Minas Gerais
Instance	Higher
Date of filing	01/24/2013
Parties in the suit	SUDFER (plaintiff) and Júlio Fontana Neto, Henrique Aché Pillar, José Paulo de Oliveira Alves, Pablo Javier de La Quintana Bruggemann, Lauro Henrique Campos Rezende, Wanderlei Viçoso Fagundes, Hugo Serrado Stoffel, Guilherme Frederico Escalhão, Delson de Miranda Tolentino, Marcus Jurandir de Araújo Tambasco, Chequer Hanna Bou-Habib, Roberto Gottschalk, Joaquim de Souza Gomes, Luiz Antônio Bonaguara, Companhia Siderúrgica Nacional S.A., Minerações Brasileiras Reunidas S.A. - MBR, Usiminas Usinas Siderúrgicas de Minas Gerais, Gerdau S.A., and Vale S.A. (defendant)
Amounts, goods or rights involved	Incalculable
Main facts	Clube Sudfer, as minor shareholder of MRS Logística S.A. (MRS), filed a claim against the directors, members of the Board of Directors, and controlling shareholders of MRS (including Vale). The Plaintiff claims that directors and members of the Board have incurred in poor management acts upon approving the tariff model that prejudices MRS, in force in the period between 1998 and 2002. The plaintiff claims that there was a conflict of interests between the controlling shareholders and MRS, to the extent that, as usual clients of the railroad, the determination of fees lower than market value was favorable to them. As consequence of the adoption of this tariff model, MRS faced losses, without distribution of dividends to shareholders. As such dividends were not distributed, the plaintiff claims to be unable to comply with its financial commitments with third parties, and, additionally, was not able to receive financing from BNDES to participate in the second offer of MSR shares, during the privatization process. Based on these claims, plaintiff claims: (i) condemnation of defendants to the payment of indemnity for moral damages in the amount of R$ 150.0 thousand; (ii) condemnation of controlling shareholders to comply with the obligation to do, namely, the sale, proportional to the share held by each one, of 3,744,440 shares issued by MRS, for the same price and under the same conditions established in the Privatization Term; and (iii) considering the claimed shares, condemnation of defendants to the payment of all dividend-related differences due to the non-payment of dividends.

Table of Contents

	On March 15, 2012, Vale, MBR and former MRS managers Chequer Hanna Bou-Habib, Guilherme Frederico Escalhão, Hugo Serrado Stoffel and Roberto Gottschalk submitted their arguments. Vale also raised procedural issues (lack of competence exception), aiming to have the claim remitted to Rio de Janeiro. There was a decision accepting this claim and determining remittance of the files to the court in Rio de Janeiro. Clube Sudfer filed an appeal against this decision, which was not granted in July 2012. In view of the rejection, Clube Sudfer filed a Special Appeal, which has been waiting to be judged by the STJ since February 2013. In August 2015, the case was sent to Rio de Janeiro, after the final decision that granted lack of jurisdiction filed by Gerdau. After the registry certified the existence of negative summons from some of the defendants, SUDFER was summoned, on November 16, 2015, to provide statement on the matter. A decision on the objections to the amount of the suit filed by the defendants is pending.
Chances of loss	Possible
Analysis of impact in the case of losing the suit / Relevance to the Company	Any unfavorable decision in the lawsuit would generate financial losses for the Company and would damage its image.

5) Procedure No. 0393909-98.2012.8.19.0001

Jurisdiction	3rd Corporate Court of Rio de Janeiro
Instance	1st instance
Date of filing	10/05/2012
Parties in the suit	Carteira Administradora Coletiva Dynamo, Ruth Cazal, Fernanda Cazal, Roberto Amaral de Almeida Rocha, Alexandra Lima Alves Derenzi, Breno Wajchenberg, Roka Fundo de Investimento Multimercado, and Invester Clube de Investimentos (plaintiff) and Vale (defendant)
Amounts, goods or rights involved	Around R$ 99.0 million.
Main facts	Plaintiff s claim that Vale had issued debentures based on deeds that provided for security deadline conditions other than those agreed upon at general meeting, reason why they claim Vale is condemned to pay the debentures according to the estimated compensation at the general meeting minutes. Vale was cited on May 27, 2013 and filed its defense on June 17, 2013. The court of the 13th Civil Court understood that, due to the issue within, the

Table of Contents

	procedure should proceed at one of the corporate courts. The process was forwarded to the 3rd Corporate Court. Being a claim which object arises out of a right, there was no production of evidence and on February 5, 2015, the decision was issued judging the claim to be applicable. On February 20, 2015, Vale appealed. On April 7,2016, a majority decision on the appeal was published upholding
Chances of loss	Possible
Analysis of impact in the case of losing the suit / Relevance to the Company	Eventual unfavorable decision in the procedure would cause financial losses to the Company.
Amount provisioned (if any)	None.

6) Case # 1:15-cv-09539

Notes:	Said suit has already been described in item 4.3 above. For further information, see suit information in Table 13 of the subsection (iii), Civil Cases , of item 4.3 of this Reference Form.

4.4.1. - Indicate the amount provisioned, if any, for the cases described in item 4.4

On December 31, 2015, no amounts associated with the suits mentioned in item 4.4 above were provisioned.

4.5 Relevant confidential claims

On December 31, 2015, the Company was not a party in any relevant and sensitive cases.

Table of Contents

4.6 Publicly known and relevant repeated or related in-court, administrative or arbitration proceedings

The following items describe repetitive or subsidiary, non-confidential and relevant judicial, administrative or arbitral suits filed by December 31, 2015. For more information about relevant suits filed after this date, see the item 4.7 of this Reference Form.

(i) Labor

This item 4.6 of the Reference Form highlights the amount allocated in relation to repeated or related claims. Given the size of the Company, the number of employees and service providers and the number of labor claims, only those repetitive processes that represent more than 5% (five percent) of all claims filed against the Company on December 31, 2015, described in the table below, namely: joint/subsidiary liability (14%), overtime (9%) additional payment due to unhealthy or risky work environments (7%), fines (6%) and commuting hours (7%).

Fact and/or legal cause	The more recurring objects are subsidiary/joint liability, overtime, additional payment for hazardous/unhealthy conditions, hours in itinere and fines.
Amounts involved	R$ 5.2 billion
Company practice or that of subsidiary which caused the contingency	Difference of interpretation between the Company, employees and unions to various facts, legal and regulatory instruments concerning the issues above.

(ii) Tax

Fact and/or legal cause	Discussion about the taxable base for the calculation of the Financial Compensation for Exploring Mineral Resources CFEM (for its acronym in Portuguese)
Amounts involved	R$ 4,954 billion (including interest and fines by December 31, 2015).
Company practice or that of subsidiary which caused the contingency	Vale is involved in many administrative and legal proceedings concerning the collection of CFEM credits. Such claims result from tax assessments by the National Department of Mineral Production DNPM, an independent government agency under the control of the Ministry of Mines and Energy and involve discussions on the alleged difference in values resulting from tax deductions and travel expenses, arbitration and prescription term for collection, incidence of CFEM on pellets, and on final client s sales invoicing abroad and irretroactivity of IN 6/00.

Table of Contents

	DNPM charges contemplated the collection period of up to 20 years before they were issued, under the interpretation that the statute of limitations applicable to CFEM would be the one set forth in the old Civil Code. The Company is disputing all the charges, arguing that the applicable statute of limitation was 5 years. In 2012, the Company paid values related to external transportation and, additionally, values analyzed by the Workgroup (comprised by Vale and DNPM members) went down, and in 2013 the Company paid the amounts related to external transportation that had not been pointed out in the invoice and had not ended yet, and, at that time, the statute of limitation is set forth as five years. In 2014, the Company withdrew from the provision other discussed theses (pellets, taxes, etc.), keeping only the external transportation not highlighted in the note and considered as under the statute of limitation, this time considering the term of 10 (ten) years. In December 2015, the Attorney General of the Union (AGU) issued legal opinion accepting recent decisions made by the Superior Court of Justice (STJ), establishing that CFEM collections are subject to a statutory period of 10 years. The Company expects the DNPM to review all ongoing charges to exclude outdated values, pursuant to this legal opinion. Vale, starting in 2016, will arrange payment of the difference in amounts relative to external transportation not highlighted in note and still valid, given that AGU s opinion stated that the statutory period is 10 years.
Fact and/or legal cause	Collection of State VAT (ICMS) on interstate transfer of ore.
Amounts involved	Pará: R$ 1.7 billion
Company practice or that of subsidiary which caused the contingency	Tax authorities in the State of Pará filed, in 2010 and 2013, six acts of infringement claiming payment of ICMS incurring on the transfer of iron ore from the mines in the State of Pará to port facilities in the State of Maranhão. The acts of infringements are based on differences in the understanding related to the calculation of ICMS in interstate transfer operations for iron ore between establishments of the same title holder. In any event, Vale claims that the Tax on Goods and Services, in interstate transfer, should incur on the cost price under the terms in Supplemental Law (LC) no. 87/96, as this is a produced good and not non-industrial product . The first three acts of infringement covering years 2007 to 2009, in the total amount of R$ 854 million (in December 2015) remained in the administrative phase on 2013. They are object of a lawsuit and they are guaranteed by a collateral letter. The other three acts of infringement related to 2010 to 2012 were judged as final in the administrative phase in November 2014 against the Company, and refer to R$ 838 million (in December 2015). Discussion on these case files began in March 2015 and they are guaranteed through guarantee insurance. Both cases await final decision..

Table of Contents

Fact and/or legal cause	Collection of ICMS on transportation
Amounts involved	Minas Gerais: Total amount: R$ 1,265 billion
Company practice or that of subsidiary which caused the contingency	Vale disagrees with the payment of Tax on Goods and Services (ICMS), allegedly due to the State of Minas Gerais, incurring on the transportation of iron ore by Vale itself. Regarding collection of generating facts related to years 2009 and 2010 (R$ 507 million), an annulment claim was filed on January 22, 2015. On January 30, 2015, a preliminary decision was published in favor of the Company. Regarding collection of generating facts occurring in years 2011 to 2013 (R$ 758 million), a motion for annulment was filed on October 7, 2015. On October 8, 2015 a preliminary order favorable to the Company was published. In any event, Vale claims that ICMS is not due as there is no provision of service for itself.

(iii) Civil

Fact and/or legal cause	Twelve pension funds claim receipt of purges made because of inflation arising from economic plans called Plano Verão and Plano Collor on amounts paid under contracts for buying and selling gold concluded with Vale from 1988. More specifically, in the Petros case, which is the most significant one in amount terms, Vale was condemned to pay the R$ 346,773,910.20 (item 4.4, table 1, above).
Amounts involved	R$ 187,002,846.77, corresponding to the total amount from the other 11 cases, that is, excluding the Petros case, which is dealt with separately.
Company practice or that of subsidiary which caused the contingency	The contingency has been generated according to the edition of economic plans called Plano Verão and Plano Collor, both created by the Federal Government between 1989 and 1991. The contracts in discussion around these were all paid by Vale and considered to be settled by the plaintiffs at the time. However, the plaintiffs started legal proceedings aimed at extending application of the decision on a matter judged in the STJ for

Table of Contents

	savings accounts books, to contracts concluded with Vale. The Company maintains that repayment of inflationary purges is not due.
Fact and/or legal cause	Suits on moral and pain and suffering damages resulting from the collapse of the Fundão dam in the municipality of Mariana
Amounts involved	Until December 31, 2015, Vale had been named in 14 suits within this category, involving a total amount of R$ 104,391,600.00. For information suits filed after December 31, 2015, see item 4.7.
Practices by the Company or its subsidiary that caused such contingency	The suits pledge pain and suffering and/or material damages resulting from the rupture of the Fundão dam in the Municipality of Mariana, in the State of Minas Gerais, owned by Samarco Mineração S.A., a company in which Vale owns 50% of the share capital, and the remaining 50% are held by BHP Billiton Brazil Ltda. (BHPB).

4.6.1. - Indicate the amount provisioned, if any, for the cases described in item 4.6

On December 31, 2015, the total amount provisioned, considering the suits described in subsection (i), (ii), and (iii) from item 4.6 above, was R$ 1,182.3 million.

(i) Labor

On December 31, 2015, the total amount provisioned, considering the labor suits that are jointly relevant, described in sub-item (i) of item 4.6 above, was R$ 840.0 million.

(ii) Tax

On December 31, 2015, the total amount provisioned, considering the tax suits that are jointly relevant, described in subsection (ii) of item 4.6 above, is R$ 338.0 million.

(iii) Civil

On December 31, 2015, the total amount provisioned, considering the civil suits that are jointly relevant, described in subsection (iii) of item 4.6 above, was R$ 4.3 million.

Table of Contents

4.7 Other significant contingencies

Discussion on Tax Benefit Concessions

Vale was involved in discussion with Swiss authorities regarding the granting of tax benefits to its Swiss subsidiary, Vale International. The dispute was resolved in December 2012 when Vale International paid the additional federal taxes claimed by the Swiss federal authorities, in four payments in the total amount of CHF 212 million Swiss francs. The first payment of CHF 53.2 million was made in January 2013 and payment of the last installment was made in December 2015.

Additional information to item 4.3

Relevant contingencies filed after December 31, 2015

Following are descriptions of relevant contingencies in which Vale was named December 31, 2015.

Considering the recent accident at the Fundão dam, it is probable that Vale is going to be named in other suits related to the accident, in addition to the ones described below, which may involve significantly relevant amounts.

Civil

Case # 0000640-06.2016.8.08.0014

Court.	2nd Civil Court of Colatina State of Espírito Santo s Court
Instance	First Instance
Filing Date	15/01/2016
Parties in the suit	Prosecution Office of the State of Espírito Santo (Plaintiff) (MP-ES) and Samarco Mineração S.A. (Samarco), Vale S.A. (Company or Vale) and BHP Billiton Brasil Ltda. (BHPB) (jointly Defendants
Values, assets or rights involved	R$ 2,000,000,000.00.

Key facts

On January 15, 2016, the MP-ES filed a public civil action to sentence Samarco to pay diffuse moral damages as the results of constraints experienced by the people from the municipality of Colatina, as a result of the rupture of the tailings dam in the city of Mariana. For further information on this accident, please refer to item 7.9 of this reference form.

The plaintiff filed protective orders, through which it demands: (i) the freeze of R$ 2 billion in the accounts of the Defendants to ensure future implementation; (ii) unveil of the Defendants tax secrecy; (iii) delivery of documentation pertaining to the accident; and, (iv) that CVM received communication about this suit.

To this effect, the MP-ES ordered the piercing of the corporate veil of Samarco s shareholders, claiming that, although there is no evidence that Samarco, owner and operator of the Fundão dam, is in a state of insolvency, there was a possibility that that could become the case.

Table of Contents

	On January 22, 2016, the MP-ES amended the complaint by including as a beneficiary the Municipal Protection Fund for Consumer Protection, in the amount of R$ 2,000,000.00. On January 19, 2016, Samarco filed an objection in which it argued that support measures to those affected by the accident had already been implemented, and financial resources were being allocated for remediation of the damages caused by the accident. Additionally, within that same context, Samarco argued that the protective order had no merit and that, moreover, it could compromise additional efforts to mitigate the impact caused by the accident. On February 11, 2016, a decision was rendered a denying the MP-ES provisional protection that requested the Defendants cash freeze. On February 17, 2016, the MP-ES filed an interlocutory appeal (AI) in objection to the decision that denied the provisional protection and petitioning the freezing of R$ 2.0 billion reais and the piercing of the Defendants corporate veil, among other measures. On March 10, 2016, a decision was rendered postponing the examination of the additional effect petitioned by MP-S, so that, before a decision was made, the 1st Instance judge was notified to provide information, and the Defendants were summoned to file statements. On March 23, 2016, a decision was rendered on the AI filed by the MP-ES upholding the decision that it objected. Since it was a monocratic decision, however, it awaits decision by the panel. On April 19, 2016, Vale filed an objection to the appeal demanding that it was denied. On April 25, 2016, Vale filed an objection requesting that the plaintiffs petition is denied; as well as the Plaintiff s sentence to pay attorneys costs and fees, grounded on the lack of collective moral damages to be compensated. In the first instance, the Defendants have already filed an objection requesting that the suit is dismissed.
Chance of loss	Possible
Analysis of the impact in the event of loss/reasons for the importance of the process for the company	The financial impact can reach R$ 2,000,000,000.00, amount determined by the MP-S. We point out, however, that the suit is still at a very early stage, which hinders a more accurate analysis of losses in case of loss.
Case # 0016395-63.2016.8.13.0521	
Court	2nd Civil Court of the Judicial District of Ponte Nova Court of the State of Minas Gerais (TJMG)
Instance	First Instance

Filing Date	18/02/2016
Parties in the suit	Prosecution Office of the State of Minas Gerais (plaintiff) (MP-MG) and Samarco, Vale and BHP (jointly, Defendants)
Values, assets or rights involved	R$ 600,000,000.00.

Table of Contents

Key facts	On February 17, 2016, the MP-MG filed a public civil action to sentence the Defendants to adopt certain measures to mitigate damages allegedly caused to urban environmental heritage in the municipality of Barra Longa, District of Gesteira and Barretos Village. The MP-MG demands that the Defendants comply with generic obligations as well as the preventive constriction of a sum of money to ensure the future implementation of yet undetermined measures. On February 19, 2016, a decision was issued by the TJMG granting the preliminary petition to (i) partially grant the injunction ordering that the following obligations are met, under penalty of a daily fine in the amount of R$ 500,000.00: (a) implementation of basic, structural, and executive projects for the full recovery of impacted public assets and, (b) implementation of contention work along the riverbed of Rio Carmo, where needed; (ii) the freeze of R$ 500,000,000.00; and (iii) presentation of a settlement proposal, if there is one. On February 18, 2016, Samarco filed a petition whereby it (i) required that (a) the suit was sent to the Federal Court because the TJMG did not have jurisdiction to decide on the sure, (b) a settlement hearing was arranged between the parties before a preliminary injunction was filed; and, (ii) it stated that Samarco had already implemented several support measures and that it had signed a preliminary agreement (TCP) with the Federal Prosecution Office and the MP-MG for the creation of a Fund, in the amount of R$ 1.0 billion, to support the social and environmental damage caused by the disaster. Additionally, within the framework of the aforementioned petition, Samarco clarified that it had already provided documents showing evidence of relevant deposits and collaterals, amounting to R$ 2.3 billion, as well as of the adoption of measures aimed at repairing environmental and social damage resulting from the accident at the Fundão dam. It also argued that the granting of financial constrictions could bring negative effects to Samarco and its obligations in the mitigation of the impacts caused by the rupture of the dam in Mariana. Given the foregoing, it petitioned that the preliminary order demanded in the complaint was denied. On February 23, 2016, a decision was rendered ordering that the case records are kept at the State Courts. On March 1, 2016, Samarco, in a petition, stated its interest in settling under terms of the demand. On March 4, 2016, Samarco filed a petition to address the decision that granted the injunction, reporting that it had already started the reconstruction, recovery, and repair of public assets affected by the accident, as well as it had hired a specialized company, named 3T Construções, to perform this action. On March 17, 2016, Samarco filed the petition in which it provided evidence of full compliance with the injunction, showing that all necessary emergency measures were already being implemented. On March 18, 2016, Vale filed a petition to provide evidence of compliance with the injunction, noting that Samarco had hired specialized firms to start the reconstruction of Barra Long s infrastructure projects, already in the development phase.

Samarco and Vale filed an interlocutory appeal against the preliminary decision, and it was granted suspensive effect.

Table of Contents

	On April 8, 2016, Vale filed a defense showing that the measures demanded by the Plaintiff had already been spontaneously fulfilled by Samarco. Grounded in this, it requested the dismissal of the case, without prejudice, given the Plaintiff s lack of interest to sue. Taking into consideration the chance that the case is not dismissed without merit, Vale has also petitioned that the demands made in the complaint were dismissed, with revocation of the granted injunction; as well as the Plaintiff s sentence to pay attorneys costs and fees.
Chance of loss	Possible
Analysis of the impact in the event of loss/reasons for the importance of the process for the company	The financial impact can reach R$ 600,000,000.00, amount determined by the MP-MG. We point out, however, that the suit is still at a very early stage, which hinders a more accurate analysis of losses in case of loss.

3) Public Civil Action 23863-07.2016.4.01.3800

Court	12th Federal Court of Belo Horizonte
Instance	First Instance
Filing Date	05/03/2016
Parties in the suit	Federal Prosecution Office (MPF or Plaintiff) and Samarco, BHPB, Vale, Federal Union, State of Minas Gerais and Espírito Santo, National Water Authority (ANA), Brazilian Institute for the Environment and Natural Renewable Resources (IBAMA), National Department of Mining Production (DNPM), Chico Mendes Institute for Biodiversity (ICMBio), National Foundation for Indigenous Populations (FUNAI), National Health Surveillance Agency (ANVISA), National Heritage and Arts Institute (IFAN), National Bank for Economic and Social Development (BNDES), State Institute of Forestation (IEF), Minas Gerais Institute of Water Management (IGAM), State Foundation for the Environment (FEAM), State Heritage and Art Institute of Minas Gerais (IEPHA), State Institute for the Environment and Water Resources (IEMA), Institute for the Defense of Agricultural and Cattle Practices and Forestry of Espírito Santo (IDAF) and State Agency of Water Resources (AGERH) (jointly, Defendants).
Values, assets or rights involved	R$155,052,000,000.00.
Key facts	On May 3, 2016, the MPF filed this civil action demanding (i) the adoption of measures to mitigate the social, economic and environmental impacts arising from the collapse of the Fundão dam, as well as other emergency measures; (ii) sentence of the Defendants to pay compensation to the people for the time they would have been prevented from enjoying a balanced environment; and, (iii) sentence to pay collective moral damages. We point out the following demands: that (i) the Defendants, jointly, within 30 days deposit in a private fund, under their own management and supervision by and independent specialized auditing firm, the initial amount of R$ 7,752,600,000.00, to be linked to the implementation of social environmental and emergency programs; (ii) the defendant companies, jointly, within 30 days, provide collateral in the amount of R$ 155,052,000,000.00; (iii) the defendant companies, jointly, in the event of freeze or constrictive measures applied to the fund, shall pay, within 5 business days, the amount equivalent to the amount frozen, to resume the available net balance; (iv) encumbrance or disposal of fixed assets belonging to the defendant companies is forbidden, and the measure must include, among others, real estate properties, mining rights, and shares

Table of Contents

held in the national territory; (v) the distributions of profits by the defendant companies shall be forbidden, whether as dividends, interest on capital, or any other means; (vi) legal freeze of all sums from the defendant companies corporate earnings not distributed to date; (vii) the defendant companies, jointly, secondarily, the public entities shall: a) present a recovery, socio and environmental mitigation and compensation plan for the entire environmental impact occurred as a result of the collapse of the Fundão dam, within at most 90 days; b) present a recovery, socio and environmental mitigation and compensation plan for the entire social and economic impact occurred as a result of the collapse of the Fundão dam, within at most 90 days; (viii) the defendant companies and, secondarily, the public entities, shall finance the expenses and fees of international organizations that may come collaborate in the suits to define the most suitable economic, social and environmental measures for mediation and dialogue with affected communities; (ix) the defendant companies shall initiate and implement, in a timely manner, the required measures to restore environmental balance, restoring the environment impacted by the collapse of the Fundão dam, and recovery, compensation and indemnity of damage through social and economic programs, projects and actions included in the environmental recovery plan for the entire environmental impact and in the social and economic recovery plan previously submitted and duly approved by the Government, and this obligation falls jointly to the defendant companies and, secondarily, to public entities; (x) the defendant companies shall adopt effective measures to stop the mining tailings still dammed in the Germano Complex or accumulated on the banks of the rivers Gualaxo do Norte, Carmo and Doce to their water bodies; (xi) the defendant companies shall adopt effective measures to ensure the stability and security of the remaining structures used by Samarco in the city of Mariana, and shall, within 30 days, submit: a) proof of the adoption of measures to ensure the stability of the Germano dam, Santarém dam, and other remaining Fundão structures (Diques 2, Sela, Tulipa and Selinha); b) and emergency action plan to be adopted in case of the collapse of structures; c) systematized update of the existing Emergency Action Plan based on a new study Dam Collapse of the Germano dam, the Santarém dam, and other remaining Fundão structures; d) improvement of roads suitable for the displacement of the population potentially impacted in the case of new collapses, including by paving of escape route planned for the Longa Barra inhabitants, which links this municipality to Ponte Nova (MG); (xi) the companies, within 10 days, shall present a detailed plan of short-term actions, without prejudice to the subsequent submission of a final plan for the management of refuse from the Fundão dam; (xii) the defendant companies shall implement an environmentally appropriate disposal of the mining waste to be removed from the area affected by the collapse of the Fundão dam, and its introduction to another production chain; (xiii) the defendant companies, within 10 days, shall submit a detailed short-term action plan, without prejudice to the subsequent presentation of a final plan, for emergency actions of re-vegetation, reforestation, and recovery of permanent preservation areas; (xiv) the defendant companies, within 60 days, shall present a preliminary diagnostic report of all the permanent preservation areas degraded along the margins of the Doce River basin and, based on the diagnosis, prepare emergency action plans for their full recovery; (xvi) the defendant companies shall, within 30 days, initiate the implementation of emergency action plan for the conservation and recovery of the aquatic fauna, which should contain, at least, the following lines of action: a) a schedule of actions for the temporary repopulation of impacted native species; b) support measures to entities that collected specimens in the Noah s Ark operation, for the conservation of genetic material and research development; (xvii) that, within 30 days, the defendant companies shall

Table of Contents

	present and start implementing the emergency plan of actions for the recovery of material cultural property and preservation of the cultural heritage districts of Bento Rodrigues, Paracatu de Baixo, and Gesteira, as well as the municipality of Barra Longa, following at least the following parameters: a) development and implementation, through qualified professionals, of archaeological project of the impacted sites; b) dissemination of scientific knowledge already produced about the archaeological heritage of the area impacted, whose access and research was abandoned due to changes in topography caused by collapse; c) recovery of impacted cultural heritage, preferably through the construction of field schools to encourage the use and training of local labor; d) actions for the rescue, generational transmission, and promotion of cultural activities of the communities, such as parties and celebrations, traditional knowledge and techniques, crafts and cooking; (xviii) the defendant companies that, within 30 days, complete the registration process of all those impacted, including individuals, companies, and groups that have suffered material or intangible impacts as a result of the collapse of the Fundão dam, located in the municipalities bathed by the rivers Doce, Gualaxo Norte, and Carmo, the Santarém stream and, estuary, coastal, and marine are located between the municipalities of São Mateus (ES) and Aracruz (ES), among others. Pursuant to the MPF s petition, the amounts indicated therein were not determined based on the accident at Samarco s dam, but on an unreasonable comparison with the Gulf of Mexico s oil spill. On May 9, 2016, the Attorney General of the Union removed the plaintiffs, for the purposes of demonstration.
Chance of loss	Possible
Analysis of the impact in the event of loss/reasons for the importance of the process for the company	The value of the case determined by MP-MG is R$ 155,052,000,000.00. We point out, however, that the case is still at a very early stage, which hinders a more accurate analysis of losses in case of loss.

Environmental

1) Case # 0001254-18.2016.4.01.3901

Court	2nd Federal Circuit Court of the Judicial District of Marabá
Instance	First Instance
Filing Date	4/12/2016
Parties in the suit	Indigenous Association of Bayaprã for the defense of the Kikrin People of the O-Odja and Indigenous Association of Porekro for the defense of the Xikrin people of the Catetê (Plaintiff Associations) and Company, FUNAI, IBAMA and BNDES (jointly Defendants)
Values, assets or rights involved	The amount of the claim assigned by the Plaintiffs is R$ 72,385,600.00, based on the values reported by S11D developments to the market.

Table of Contents

Key facts	The Plaintiff Associations filed a public civil action demanding (i) the suspension of the environmental licensing process of the S11D project; (ii) payment of property and pain and suffering damages to be determined; and, (iii) payment of a monthly income in the amount of R$ 2,000,000.00 per village, on the grounds of failing to conduct a Study of the Indigenous Component (ECI) and to consult the indigenous community of Xikrin in advance. May 13, 2016, a statement was filed before the request for an injunction. No decision has been made regarding the plaintiffs association s request.
Chance of loss	Remote
Analysis of the impact in the event of loss/reasons for the importance of the process for the company	In case of loss or injunction, there is risk of suspension of the installation process of the S11D project, in addition to the financial impact.

Additional information to item 4.6

Relevant contingencies filed after December 31, 2015

Following are descriptions of relevant contingencies in which Vale was named December 31, 2015.

Considering the recent accident at the Fundão dam, it is probable that Vale is going to be named in other suits related to the accident, in addition to the ones described below, which may involve significantly relevant amounts.

Fact and/or legal cause	Suits on moral and pain and suffering damages resulting from the collapse of the Fundão dam in the municipality of Mariana
Amounts involved	Until December 31, 2015, Vale had been named in 14 suits within this category, involving the total amount of R$ 104,391,600.00, as described in item 4.6 above. It is important to note that, until March 31, 2016, the aforementioned amount was increased to 124 demands totaling, on that date, R$ 138,820,788.00.
Practices by the Company or its subsidiary that caused such contingency	The suits pledge pain and suffering and/or material damages resulting from the rupture of the Fundão dam in the Municipality of Mariana, in the State of Minas Gerais, owned by Samarco Mineração S.A., a company in which Vale owns 50% of the share capital, and the remaining 50% are held by BHP Billiton Brazil Ltda. (BHPB).

Court settlement regarding the Samarco Dam s Collapse

Source: Court settlement within the scope of Public Civil Action # 0069758-61.2015.4.01.3400

Parties in the suit	Samarco Mineração S.A., Vale S.A., BHP Billiton Brasil Ltda. (BHPB), Federal Union, States of Espírito Santo and de Minas Gerais, Brazilian Institute for the Environment and Natural Renewable Resource (IBAMA), Institute Chico Mendes, National Water Authority (ANA), National Department for Mining Production (DNPM), National

Table of Contents

	Indigenous Foundation (FUNAI), State Institute for Forestation (IEF), Minas Gerais Institute for Water Management (IGAM), State Foundation for the Environment (FEAM), and the State Institute for the Environment and Water Resources, Institute for the Defense of Agricultural and Cattle Practices and Forestry of Espírito Santo and State Agency for Water Resources.
Date of Agreement	03/02/2016
Description of the facts that led to this agreement	The undersigned authorities filed Public Civil Action (case #0069758-61.2015.4.01.3400) against Samarco and its shareholders demanding reimbursement of alleged environmental, social and economic damage resulting from the rupture of Samarco s tailings dam, as well as the adoption of a series of mitigation, remediation and compensatory measures by Samarco and its shareholders for damages allegedly arising from the accident. For more information on Public Civil Action # 0069758-61.2015.4.01.3400, see item 4.3 of this Reference Form, and for additional information concerning the accident, see items 4, 7.9 and 10.1 of this Reference Form. The amount the plaintiffs have set for the Public Civil action value is R$ 20,204,968,949.00. After a series of talks between the authorities, Samarco, Vale and BHPB, the parties signed the agreement, which provides a long-term remediation and compensation plan in response to the event occurred (Agreement).
Liabilities	Under the agreement, Samarco, Vale and BHPB shall establish a foundation that will develop and implement the environmental, social and economic programs for remediation and compensation for the damages caused by the rupture of Samarco s dam. The agreement includes two broad types of programs: Remediation programs to restore the environment, local communities, and the social conditions of the regions affected; Compensation programs to compensate for damages, in cases where remediation is not possible, and to provide resources for certain special projects, always acting in good faith. Additionally, an external independent auditor shall monitor the Foundation s activities.

Table of Contents

	Samarco shall provide resources for the Foundation through contributions such as (calendar year): R$ 2 billion in 2016, less the amount already spent on or allocated to the remediation and compensation actions; R$ 1.2 billion in 2017; R$ 1.2 billion in 2018. Samarco agreed to make the annual contributions needed to implement the remediation projects and compensation for each fiscal year. From 2019 to 2021 these contributions shall be equivalent to R$ 800 million to R$ 1.6 billion. After the agreement is signed, the Foundation will allocate an annual amount of R$ 240 million, for a period of 15 years, for the implementation of remediation projects and compensation. These annual amounts are already included in the contribution amounts reported for the first six years. In addition, a contribution of R$ 500 million shall be made to the basic sanitation of the regions affected.
Term, if there is one	The Agreement has a term of 15 years renewable yearly until all the obligations set forth in the agreement have been met.
Information about the activities adopted to comply with the obligations undertaken in the Agreement	Data and studies are already under assessment and development for compliance with the Agreement.
Consequences in event of non-compliance	If Samarco fails to comply with its obligations to contribute resources to the Foundation, Vale and the BHPB are obliged to allocate resources to the Foundation, in proportion with their respective shareholdings of 50% in Samarco.
Other comments	The Agreement was approved by the Federal Regional Court of the 1° Region on May 5, 2016, and it suspended the Public Civil Action (Case # 0069758-61.2015.4.01.34), aforementioned. The Federal Prosecutors Office (MPF) filed a motion for clarification in which it questioned the jurisdiction of the Federal Regional Court of 1st Region to approve the agreement. Moreover, the MPF questioned the terms of the agreement, with respect to the adequacy of the measures set forth therein, as well as the legitimacy of the agreeing parties for the conclusion of the agreement. The MPF, thus,

Table of Contents

	request a rehearing en banc and the suspension of the effectiveness of the decision. The Agreement does not automatically cover private civil suits, other public civil actions or criminal charges.

Relevant Conduct Modification Agreements and Terms of Commitment

1) Cooperation Agreement not resulting from Administrative / Legal Proceeding

Origin: Terms of Engagement signed with the Indigenous Community (TI) Mãe Maria

c) Parties	Vale, Indigenous Association Te Mêmpapytarkate Akrãtikatêjê da Montanha, Jê Jõkrityiti (Akrãkaprekti) Association, Indigenous Association Parkatêjê Amjip Tar Kaxuwa and Indigenous Association Kyikatêjê and Fundação Nacional do Índio (FUNAI), with the Federal Prosecution Office (MPF) at Marabá, acting as intervening party.
d) Agreement Date	03/01/2012, 07/27/2012, 07/24/2012, and 08/02/2012
e) Description of the facts that have led to entering this agreement	Based on its social accountability policy, Vale already had entered into Engagement Agreements with the indigenous individuals from the Mãe Maria TI, which expired in 2012. Therefore, due to the influence of the Carajás Railroad (EFC) on this community, Vale decided to continue to send funds to meet the urgent needs of the individuals from this community, making sure that the Indigenous Component study and Basic Environmental Plan (PBA) were conducted, documents that are required for the licensing process to expand the Carajás Railroad, now, with FUNAI, helping communities to manage funds.
f) Commitments made	Financial transfer in support to health, education actions, productive activities, surveillance of the territory and administration. On the other hand, indigenous communities commit not to stop any productive activity or invade Vale facilities, in particular the Carajás Railroad, and they also authorize the Indigenous Component study and the PBA, documents required for the licensing process to the project to expand the Carajás Railroad.
g) Deadline, if any	Many different deadlines due in January 2015, . Said Cooperation Agreement ended and it was renewed, with no interference by the MPF, according to the Cooperation Agreement described in table (2) below.
h)Information about the conduct adopted to comply with the commitments made in the agreement	The Community Relations Director had two focal points monitoring compliance with the commitment made in the Engagement Agreement, in particular the transfer of financial resources.
(i) Consequences in the event of noncompliance	Failure to comply by indigenous people causes suspension of the transfer of funds and health service. When non-compliance is by Vale, there is risk of indigenous people promoting actions that stop or affect Company or

120

Table of Contents

	subsidiaries activities, as manifestations that imply stoppage at the EFC, prejudicing railroad operations. Said manifestations by the indigenous people also tend to restrict freedom of access of Vale s teams and hired third parties who run studies inherent to environmental licensing processes and actions related to compliance with conditions, which may be characterized as non-compliance with the environmental licenses granted by the environmental entity, weakening Vale s position, or of its subsidiaries, at the institutional level, with not prejudice to the executive measures to be taken by the MPF, IBAMA, FUNAI, and the other autarchies involved with the protection of indigenous rights.

Cooperation Agreement not resulting from Judicial/Administrative Proceedings

Source: Agreement signed with the Indigenous Community (TI) Mãe Maria

(a) Parties in the suit	Indigenous Association of Mpakwyri Mpawor, Indigenous Association of Gaviao Je Amjip, Parkrekapare Association, Je Jokrityiti Association, Indigenous Association of Te Mempapytarka, Indigenous Association of Parkateje Amjip and Vale
(b) Date of Agreement	5/19/2015; 5/29/2015; 5/26/2015; 5/7/2015; 4/1/2015; 5/1/2015.
(c) Description of the facts that led to this agreement	Based on its social responsibility policy, Vale already had Agreements with the indigenous inhabitants of TI Mãe Maria, which expired in 2012. Thus, due to the influence of the Carajás Railroad (EFC) on this community, Vale decided to continue to transfer financial resources to meet the emergency needs of the members of the community, ensuring the completion of the Indigenous Component study and of the Basic Environmental Plan (PBA), documents required for the licensing process for the expansion of Carajás railroad, which currently counts with the participation of FUNAI, which is assisting the communities in the management of resources.
(d) Liabilities	To make financial transfers to support healthcare, education actions, productive activities, and the monitoring and management of the territory. On the other hand, the indigenous communities have committed to not shutting down any productive activity or invade Vale s facilities, particularly the EFC, and they have also authorized the completion of the Indigenous Component study of the PBA, documents required for the permit licensing process for the expansion of the EFC project.
(e) Term, if any.	Various deadlines, due in 2020, time when the Indigenous Component of the PBA would be concluded.
(f) Information about the activities adopted to comply with the obligations undertaken in the Agreement	The Community Liaison Board has focal points to monitor compliance with the obligations set forth in the Agreement, particularly the transfer of financial resources.
(g) Consequences in the event of non-compliance	In the event that the indigenous people fall into noncompliance, the transfer of resources and health services shall de suspended. If Vale is noncompliant, there is a risk that the indigenous people will shut

Table of Contents

down or interfere with the activities of the Company or its subsidiaries, such as through demonstrations involving the shutting down of the EFC, damaging EFC railway operations. Said demonstrations also tend to have an impact on the indigenous people not allowing Vale s teams or contracted teams to have the access needed to carry out studies concerning environmental licensing processes and implementation of actions relating to the fulfillment of conditions, which could be characterized as noncompliance with the environmental licenses granted by the environmental agency, weakening the position of Vale or its subsidiaries at an institutional level, without prejudice to executive measures to be taken by the MPF, IBAMA, FUNAI and other authorities involved in the protection of indigenous rights.

3) 2nd Amendment to the Agreement to Promote Sustainable Development, executed with FUNAI and the Krenak People, effective between 2011 and 2019, and this agreement is an amendment to the Agreement that settled Public Civil Action no. 2006.38.13.009676-0

Origin: Agreement that settled the Public Civil Action filed by the MPF and FUNAI against CEMIG Companhia Energética de Minas Gerais, CVRD Companhia Vale do Rio Doce and CHA Consórcio Hidrelétrico Aimorés (Public Civil Action and Agreement , respectively). After termination of the Agreement, on 11/30/2011, the Company voluntarily executed: (i) the Agreement to Promote Sustainable Development of the Indigenous Land of the Krenak (Agreement to Promote), (ii) the First Amendment to the Agreement to Promote and (ii) the Second Amendment to the Agreement to Promote Segundo Aditivo ao Termo de Fomento.

Parties	a) Agreement - MPF, FUNAI, CEMIG Companhia Energética de Minas Gerais, CVRD Companhia Vale do Rio Doce and CHA Consórcio Hidrelétrico Aimorés;
	b) Agreement to promote Vale, Krenak Indigenous People, FUNAI and MPF;
	c) First Amendment to the Agreement to Promote Vale, Krenak Indigenous People, FUNAI and MPF;
	d) Second Amendment to the Agreement to Promote - Vale, Krenak Indigenous People and FUNAI
Agreement Date	Agreement executed on 07/18/2008 to 11/30/2011
	Agreement to Promote executed on 10/24/2011 effective from 12/01/2011 to 06/01/2012
	First Amendment to the Agreement to Promote executed on 05/03/2012 effective from 12/01/2011 to 12/01/2013*
	Second Amendment to the Agreement to Promote executed on 03/27/2015 effective from 12/01/2011 12/01/2019*

*Amendments above alter terms in the original Agreement to Promote, with retroactive effects. This is the reason their respective

Table of Contents

	effective dates are 12/01/2011, date of effectiveness of the Agreement to Promote.
Description of the facts that have led to entering this agreement	Approval of the Agreement settled the Public Civil Action filed by the MPF and FUNAI, that aimed the deployment of mitigating and compensation measures arising out of the installation of Usina Hidrelétrica de Aimorés. The purpose of the Agreement was the provision of environmental, social, and economic support, by recovering 54 hectare of green area, construction of 5 cultural centers and deployment of milk cattle project. After termination of the Agreement, voluntarily by the Company, and aiming to maintain the support and the relationship between Vale and the Krenak People, new terms were executed, maintaining the Company assistance to the development of the indigenous people. The contract currently in effect is the Second Amendment to the Agreement to Promote.
Commitments made	Provide financial and technical support to milk cattle project.
Deadline, if any	Agreement 07/18/2008 to 11/30/2011 executed on 07/18/2008 Agreement to Promote 12/01/2011 to 06/01/2012 executed on 10/24/2011 First Amendment to the Agreement to Promote 12/01/2011 to 12/01/2013* - executed on 05/03/2012 Second Amendment to the Agreement to Promote 12/01/2011 12/01/2019* - executed on 03/27/2015
	* Amendments above alter terms in the original Agreement to Promote, with retroactive effects. This is the reason their respective effective dates are 12/01/2011, date of effectiveness of the Agreement to Promote.
Information about the conduct adopted to comply with the commitments made in the agreement	The Department of Community Relations includes a focal unit that monitors compliance with obligations set forth in the Second Amendment to the Agreement to Promote.
Consequences in the event of noncompliance	Failure to comply with the Second Amendment of the Agreement to Promote by indigenous people causes suspension of the transfer of funds. When non-compliance is by Vale, there is risk of indigenous people promoting actions that stop or affect Company or subsidiaries activities, as manifestations that imply stoppage at the EFC, prejudicing railroad operations. Said manifestations by the indigenous people also tend to restrict freedom of access of Vale s teams and hired third parties who run studies inherent to environmental licensing processes and actions related to compliance with conditions, which may be characterized as non-compliance with the environmental licenses granted by the environmental entity, weakening Vale s position, or of its subsidiaries, at the institutional level, with not prejudice to the

Table of Contents

executive measures to be taken by the MPF, IBAMA, FUNAI, and the other autarchies involved with the protection of indigenous rights.

4) Agreement of Social and Environmental Commitment FUNAI, Vale, MPF and Tupiniquim People of Terra Indígena Comboios (TI Comboios), executed in August 2014, related to the Subprogram of Social and Environmental Liabilities of the Basic Environmental Plan ((PBA) of the Corrective Operation License (LOC) of Estrada for Ferro Vitória-Minas

Origin: - Agreement of Social and Environmental Commitment related to the Subprogram of Social and Environmental Liabilities of the Basic Environmental Plan (PBA) of LOC for Estrada de Ferro Vitória-Minas

Parties	Vale, MPF, FUNAI and the Tupiniquim People of TI Comboios.
Agreement Date	08/13/2014
Description of the facts that have led to entering this agreement	Based on the Indigenous Component Study, responsible for identifying possible impacts of the EFVM on the TI Comboios, in the Corrective Operation License Process for EFVM, actions were proposed under the Environmental Basic Plan, including the Subprogram of Social and Environmental Liabilities, aiming to provide financial funds to the indigenous people to be used in specific areas: education, health, home, production activity and social projects.
Commitments made	Transfer financial funds busing a judicial account, with intermediation of the MPF and FUNAI, to support indigenous people in actions at the following areas: education, health, home, production activity, and social projects.
Deadline, if any	All obligations under the Instrument of Commitment were met by the Company, and it was duly closed.
Information about the conduct adopted to comply with the commitments made in the agreement	The Department of Community Relations includes a focal unit that monitors compliance with obligations set forth in the Agreement of Social and Environmental Commitment
Consequences in the event of noncompliance	Failure to comply with the Second Amendment of the Agreement to Promote by indigenous people causes suspension of the transfer of funds. When non-compliance is by Vale, there is risk of indigenous people promoting actions that stop or affect Company or subsidiaries activities, as manifestations that imply stoppage at the EFC, prejudicing railroad operations. Said manifestations by the indigenous people also tend to restrict freedom of access of Vale s teams and hired third parties who run studies inherent to environmental licensing processes and actions related to compliance with conditions, which may be characterized as non-compliance with the environmental licenses granted by the environmental entity, weakening Vale s position, or of its subsidiaries, at the institutional level, with not prejudice to the executive measures to be taken by the MPF,

Table of Contents

	IBAMA, FUNAI, and the other autarchies involved with the protection of indigenous rights.

5) Legal Agreement

Origin: Proceeding no. 21337.52.2011

Parties	Vale, MPF, Palmares Cultural Foundation, National Institute for Colonization and Land Reform, and IBAMA.
Agreement Date	03/08/2012
Description of the facts that have led to entering this agreement	The MPF has accused Vale, who subsidized the licensing process for the Carajás Railroad expansion project, of lacking the environmental study investigating the diagnostic impact of the expansion on the two quilombo communities located in the State of Maranhão.
Commitments made	(i) Transfer the amount of R$ 700,000.00 to the Palmares Foundation to help with the construction of clinics and of an educational center; and (ii) Development of a study of the local environmental impact, recovery of waterways, and the building of overpasses in the next four years, as specified in the legal agreement schedule.
Deadline, if any	Sparse deadlines, with commitment to be met through the end of the Carajás Railroad expansion project. Among them are: (i) the already made payment of R$ 700,000.00 to the communities to finance the building of social devices in the community and Palmares Foundation; (ii) development of an environmental study already done and the adoption of measures to mitigate the impact of the Company s operations and activities in the region; (iii) building of four overpasses for the communities that are parties in the agreement and with a deadline of construction extending over four years; and (iv) improvement of the current passageways until the overpasses are built in the region. These commitments are underway.
Information about the conduct adopted to comply with the commitments made in the agreement	The General Manager of Project Relations, who works under the Director of Northern Logistic Projects (DIPL), focuses on engineering and public relations, monitoring compliance with the activities developed by Vale. The commitments and deadlines reflect the item above.
Consequences in the event of noncompliance	The MPF may request that the Company comply with the commitments made, under penalty of a fine determined by a competent federal judge.

Table of Contents

Other notes

6) Conduct Modification Agreement (TAC) no. 283/2004

Origin: Preparation Proceeding no. 0203/01 - Regional Labor Public Prosecution Office of the 1st region Rio de Janeiro

Parties	Labor Prosecution Office and Vale S.A.
Agreement Date	12/15/20014
Description of the facts that have led to entering this agreement	Legal obligation to train and hire people with disabilities to meet legal requirements, including regarding the quota set forth in article no. 93 of Law no. 8.212/91
Commitments made	Initially, professionally train about 34 to 40 disabled people to start. To develop a national program. To enter into partnerships with Organization like SENAI for training. During training, to provide transportation, food, and medical care. After training, to hire people with disabilities.
Deadline, if any	The TAC is renewed yearly and it indicates the year s quota for training and hiring, which, in 2015, corresponded to the hiring of about 120 people.
Information about the conduct adopted to comply with the commitments made in the agreement	Development of an inclusion program for people with disabilities.
Consequences in the event of noncompliance	R$ 1,000.00 per worker that is not trained and hired, within the quota for that particular year
Other notes	The TAC allows Vale to fail to fully comply with the quote set forth by Law no. 8.212/91, while complying with obligations set forth therein. If there is noncompliance with the TAC, Vale must immediately meet the quote specified by the Law, losing this requirement provided by the Agreement.

Table of Contents

7) Environmental Obligation Agreement: TCA at do Pico do Itabirito

Origin: Public Civil Investigation no. 319.02.0001-8 MPMG

Parties	Minerações Brasileiras Reunidas S.A. - MBR, Vale S.A., Ministério Público Estadual-MG, Instituto Estadual de Florestas, Secretaria de Estado do Meio Ambiente e Desenvolvimento Sustentável de Minas Gerais, and Anglogold Ashanti Brasil Mineração Ltda.
Agreement Date	7/9/2010
Description of the facts that have led to entering this agreement	Agreement signed for the enforcement of protection measures to the area known as Pico do Itabirito and archeological site of Cata Branca.
Commitments made	Environmental and landscape remediation in protected areas.
Deadline, if any	Schedule presented to the State Prosecution Office, which was expected to be concluded in July 2015.
Information about the conduct adopted to comply with the commitments made in the agreement	Procedures to recover areas in progress, with fencing and signage as archeological site, environmental education programs and environmental remediation project at the area known as Pico do Itabirito. The TAC was fully met.
Consequences in the event of noncompliance	Fine R$2,500.00/day delaying enforcement of the agreed and non-complied with portion.
Other parties	Minerações Brasileiras Reunidas S.A. - MBR, Vale S.A., State Prosecution Office MG, State Forestry Institute, State Secretary for the Environment and Sustainable Development of Minas Gerais and Anglogold Ashanti Brasil Mineração Ltda.

Conduct Adjustment Agreement # 118/2015

Source: Civil Public inquiry # 3212.2014.03.000/9-12- Regional Prosecution Office for Labor Related Matters of the 3rd Region/MG Minas Gerais

(a) Parties	Prosecution Office for Labor Related Matters and Vale S.A.
(b) Date of Agreement	31/07/2015
(c) Description of the facts that led to the agreement	The alleged slavery-like practices of Vale s service provider, the company Ouro Verde Locação e Serviços S/A. For additional information, refer to subsection (i) (5) of item 4.3 of this Reference Form.

Table of Contents

(d) Liabilities	Preventive and corrective measures have been adjusted to ensure the labor rights of service provider employees, especially regarding the sanitary conditions of their facilities, the promotion of decent work, and elimination of all forms of forced or compulsory work analogous to slave labor. The agreed upon commitments are being duly implemented.
(e) Term, if any.	Undetermined term in the absence of diverse provision.
(f) Information about the activities adopted to comply with the obligations undertaken in the Agreement	Vale, throughout the second half of 2015, has provided several training opportunities to company managers in that State to inform them about the obligations undertaken by Vale. Guidelines were given regarding the inclusion of a standard clause in the contracts signed by the company provide the Company s resolution in the event of the employment of child or slave labor or any situation that could be characterized as an offense to human dignity.
(g) Consequences in the event of non-compliance	R$ 20,000 .00 per item failed to fulfill up to R$ 500,000.00
(h) Other comments	The Conduct Adjustment Agreement, in addition to preventing further action by the Prosecution Office for Labor Related Matters, has also given Vale the opportunity to objectively adoption of preventive and corrective measures against the exploitation of degrading labor or slavery-like labor in the Company s production chain, showing proof of compliance with the National Pact to Fight Slavery of which the Company is a signatory.

Table of Contents

4.8 Rules of the country of origin and of the country in which the securities are held in custody

Not applicable to the Company, as it is not a foreign issuer.

5.1. Internal controls and risk management policy of risk relative to risks listed in item 4.1

a. If the Company has a formal risk management policy, indicate the body that approved it and the date of approval, otherwise, indicate reasons why the company has not adopted such a policy

The Company understands that risk management is essential to support its growth plan, strategic planning and financial flexibility. Therefore, Vale has developed its risk management strategy with the objective of providing an integrated view of risks to which it is exposed.

The guidelines for corporate risk management strategy are set out in the Company s Corporate Risk Management Policy of the company were approved by the Board of Directors originally on December 22, 2005 and amended on August 25, 2011.

b. Risk management policy s goals and strategies, if any, including:

The Company s Corporate Risk Management Policy is based on the following principles: (i) to support the growth plan, strategic planning, and business continuity; (ii) to strengthen capital structure and asset management; (iii) to allow the appropriate degree of flexibility in financial management; and (iv) to strengthen Vale s corporate governance practices.

i. Risks for which protection is sought

The Company seeks protection for the main risks that may adversely and relevantly impact goals the outlined by the Company s senior management of the company, its reputation as well as its financial and operational results, which are described in item 4.1 of this reference form, among which are:

(i) risks that may impact Company s operations, in particular, events of force majeure or events arising from the ordinary processes of the Company and its subsidiaries that may impact their production process and installed capacity;

(ii) risks associated with the Company s strategic decisions to meet its purposes and/or arising from the Company s ability to protect itself or adapt to changes in the mining sector, in particular concerning the demand for its products, the company s capital structure and performance in different markets;

(iii) legal or regulatory sanctions risk, lawsuits against the company and its subsidiaries, whose loss of or application of penalties, can impact the Company relevantly, from a financial or operational perspective, or harm its image;

(iv) risks of shutdown of the Company s and its subsidiaries project activities due to failure to obtain or renewal regulatory licenses, including, but not limited, to environmental licenses;

(v) risk of cost increases in Company operations due not only to market conditions but also to legal and regulatory changes in locations in which the company operates;

(vi) risks associated with the lack of consistency and adequacy of the Company s systems and control of operations and projects, including, but not limited to information systems, as well as management failures of the Company s internal controls.

ii. Instruments used for protection

Operational risk management is a structured approach that Vale uses to manage the uncertainty related to possible inadequacy or flaws in internal processes, as well as the people, systems and external events, according to ISO 31000 principles and guidelines.

The main risks are monitored on a regular basis, as are the effectiveness of their key controls for the prevention/mitigation and implementation of treatment strategies. Thus, Vale tried to have a clear vision of their main risks, acting on them in a systematic way by adopting of measures of protection or mitigation, including, for example:

Table of Contents

(i) definition of indicators and parameters for risk monitoring;

(ii) development of technological solutions for the optimization of Company processes;

(iii) investment in training Company employees working in the planning and execution of projects;

(iv) actions to improve efficiency in project licensing processes to avoid delays and shutdowns, such as (a) by promoting greater integration between environment and project development teams, (b) by developing a best practice guide for Environmental Licensing and the Environment, (c) by assembling teams of highly qualified experts, and (d) by encouraging greater interaction with environmental agencies;

(v) continuous improvement of the Company s healthcare and safety management systems as well as the constant dissemination of information and prevention campaigns in the Company to improve employee healthcare and safety standards;

(vi) control and management of environmental liabilities in its units, as well as corrective measures to establish quality levels compatible with a specific future use;

(vii) environmental studies aimed at the demarcation of the extent of environmental degradation and the potential risks to health and the environment;

(viii) choice of high-level partners and maintenance of fair relationship and long-term partnership with key suppliers, customers, and partners in joint ventures. For information on credit risk relationship of counterparties, see item 5.5 of this Reference Form;

(ix) Management of an energy portfolio made up of hydropower plants of self-production and long-term supply contracts, based on the current and projected energy needs of its mining operations to mitigate the risk of increased cost and/or lack of energy;

(x) emphasis on cost reduction, capital discipline, liabilities management, working capital management and divestiture. For information concerning Capital Management and Liquidity Risk, see item 5.5 of this Reference Form;

(xi) in order to mitigate risks related to extraction, (a) acquisition of (an extensive and high-quality base of assets in the businesses in which it operates, without relying solely and exclusively on certain mines, (b) significant investments in mineral exploration, because, larger sampling reduces the risks in estimating reserves; (c) continuous replenishment of its reserves base through new projects to prevent mine depletion; (c) diversification of its activities in various geographical locations as well as through the extraction of various types of minerals;

(xii) adoption of internal controls and mechanisms to detect failures of control and to gather information on breach of conduct cases, especially through the Complaints Channel;

(xiii) systematic monitoring of changes in government policies and regulation in the sector, to react and adapt quickly to these changes, as well as, where applicable, participate in discussions relating to such changes through representative entities of the mining industry in which it participates;

(xiv) promotion of activities in a responsible manner in all location where it operates, seeking respect for communities and the environment;

(xv) ongoing monitoring of the Company s contingencies and lawsuits, making every possible defense effort in the lawsuits in which the Company and its subsidiaries are a party;

(xvi) adoption, in situations of crisis and disasters, of measures that include (a) business continuity plans that contemplate immediate response to protect people, assets and the Company s image, (b) alternative solutions for ensuring business continuity and fast recovery to return to normal production flow and, (c) monitoring systems and prediction of weather conditions;

(xvii) hiring of insurance. For information about hiring insurance, see item 5.5 of this Reference Form.

iii. **Organizational structure of risk management**

The Board of Directors is the body responsible for approving Vale s risk policies. It approved the Corporate Risk Management Policy on December 22, 2005 as well as its subsequent amendment on August 25, 2011. The Finance Committee, in turn, as an advisory body to the Board of Directors, is responsible for issuing opinions on Vale s corporate risk policies.

Table of Contents

The Risk Management Executive Committee, created by the Board of Directors, is the main body of the risk management framework. It is responsible for supporting the Executive Board in conducting risk analyses and issuing opinions on Vale Group s risk management. It is also responsible for monitoring and managing corporate risks, as well as for the oversight and review of the principles and instruments of corporate risk management, in addition to regularly reporting to Vale s Executive Board on the main risks and respective exposures.

The Executive Board is responsible for (a) to assess and approve the long-term risk mitigation strategies recommended by the Risk Management Executive Committee, (b) to approve the Corporate Risk Management Policy s development in standards, rules and responsibilities as well as to inform the Management Board about these procedures.

Standards and procedures of risk management complement Corporate Risk Management Policy and define practices, processes, controls, roles and responsibilities in the Company with regard to the management of risks. Under such rules and procedures and determination of responsibilities by the Company s Executive Board, it the responsibility of the:

(I) *Executive Management of Operational Improvements* as the body in charge of operational risk management: (a) to consolidate Vales risk profile, regularly reporting to the senior leadership and to the Risk Management Executive Committee; (b) to provide information on Vale s key risks for internal and external stakeholders, which includes producing an annual report to the Internal Audit department to prepare the Audit Annual Plan;

(II) *Executive Board of Finances and Investor Relations*, to monitor the activities of its boards, whose responsibilities are described next:

(a) *Global Controllership Board, in charge of monitoring risks in the preparation of financial statements through one of its management groups. Internal Controls Management, subject to the Global Controllership Board, it is the area in charge of addressing risks related to the preparation of financial statements;*

(b) *Treasury and Finance Board*, in charge of Vale s financial risk management and of defining and proposing, to the Risk Management Executive Committee, operations or market risk mitigation measures consistent with Vale s strategy. To this end, said Board has departments specialized insurance as well as a Credit and Market Risk Management group that is in charge of verifying the effectiveness of financial risk policy adopted, as well as of forwarding proposals to the Risk Executive Committee. Also, to support the activities of the Credit and Market Risk Management group, the Treasury and Finance Board has a back-office department, which (i) monitors contracted financial instruments, (ii) is responsible for the confirmation of the financial characteristics of operations of counterparties with which the operations were carried out, (iii) reports the fair value of positions, and (iv) also assess whether the operations in accordance with the internal approval.

(III) *Business Areas and areas of support areas for the entire Company*: (a) to identify, analyze, evaluate and address major risks, with regular reviews and at each significant change in risk circumstances: (b) to monitor the evolution of the level of risk, the efficiency status of key controls of risk prevention/mitigation and the progress of the implementation of action plans to reduce risks, and (c) to report information, at least quarterly, to the support areas in charge of specific processes of risk management processes and to the Executive Management of Operational Improvements.

In addition to the aforementioned structures, Vale also has (a) and Internal Audit department that is in charge of assessing the processes independently, verifying their compliance with the rules and policies adopted by the company and possible cases of fraud, misappropriation or damage to assets; and, (b) an Ombudsman s Office, which is responsible for the receipt and processing of complaints about breaches in Code of Ethics and Conduct and also to the principles of good corporate governance and legislation such as the Sarbanes-Oxley Act.

Finally, it should be noted, that it is the responsibility of Vale s Supervisory Board to oversee the internal control assessment process run by the Administration for the preparation of the accounting reports and by the independent auditors (KPMG Auditores Independentes), through regular meetings where the results of the work developed by the Internal Control Management are reported together with their respective remediation plans established by those in charge of the process.

c. Adequacy of operational structure of internal controls for verifying the effectiveness of the adopted policy

In line with the Company s Corporate Risk Management Policy, Vale has an Internal Controls Management that evaluates the effectiveness of the controls environment associated with Company risks. Procedures are established to provide safety in the reliability of the financial statements. The internal control assessment process foresees joint action with the business areas for risk assessment, process mapping, assessment of their compliance with other policies and standards, definition of controls, preparation of monitoring reports of indicators and action plan implementation reports. Additionally, the Internal Audit also participates in the compliance process based on the established norms

Table of Contents

5.2 Description of the market risk management policy reported in item 4.2

a. If the Company has a formal risk management policy, indicate body that approved it and the date of approval, otherwise, indicate reasons why the company has not adopted such a policy

The Company s risk management is integrated to ensure that the total level of corporate risk remains aligned with the guidelines defined by the Board of Directors and the Executive Board.

Therefore, the Corporate Risk Management Policy, approved by the Board of Directors on December 22, 2005, and amended on August 25, 2011, establishes guidelines applicable to the management of the entire set of corporate risks to which the Company is exposed, and not specifically to market risks only. Following are some of these guidelines:

- Measuring and monitoring of the Group s corporate risk group in a consolidated manner, taking into consideration the effect of diversification, when applicable, of its business set.

- Assessment of the impact of new investments, acquisitions and divestments in the Group s corporate risk profile.

- Adaptation the Group s corporate risk profile to the needs of its growth plan, strategic planning, and business continuity.

- Financial operations with leveraged derivative structures are forbidden.

b. Risk management policy s goals and strategies:

The Company s Corporate Risk Management Policy is based on the following principles: (i) to support the growth plan, strategic planning, and business continuity; (ii) to strengthen capital structure and asset management; (iii) to allow the appropriate degree of flexibility in financial management; and (iv) to strengthen Vale s corporate governance practices.

i. Market risks for which protection is sought

The Company manages the market risks main risks to which it is exposed, which are: (i) exchange rates and interest rates, and (ii) prices of products and inputs, described in item 4.2 of this Reference Form. When necessary, the Company may seek protection to adapt its risk profile to the principles that underlie its Corporate Risk Management Policy.

ii. Asset protection strategy (hedge)

An assessment of the potential impact of exposure to the market risk factors aforementioned is conducted regularly to support the decision-making processes regarding the appropriate protection strategy. When necessary to match the Group s risk profile and reduce the volatility of its future cash flows, market risk mitigation strategies are assessed and deployed in line with such goals. Some of these strategies use financial instruments, including derivatives. Portfolios comprised of financial instruments are monthly monitored in a consolidated manner, allowing the follow-up of financial results and their impact on cash flow.

The currency exposure of the Company s cash flow is assessed in conjunction with other exposures to market risks and product and input prices and interest rates and mitigated when required to support the Company s growth plan, strategic planning, and business continuity. Various forms of mitigation can be used: financial transactions through the use of derivatives in order to hedge, committed lines of credit to ensuring liquidity, or possible strategic decisions to reduce reducing the risk of cash flow.

In line with their risk management policy, the Company may use strategies to mitigate the risk of product and input prices, including conducting transactions at term, futures contracts and zero cost-collars (hedge involving the simultaneous purchasing and sale of options in order to keep the total premium of the transaction at zero). For more information view item (iii) below.

iii. Instruments used for asset protection (hedge)

The financial instruments used for asset protection include predominantly term operations, swaps, futures, and zero cost-collars (hedge involving the simultaneous purchasing and sale of options in order to keep the total premium of the transaction at zero).

Protection programs and equity programs employed by Vale, and their objectives include:

- Protection program of loans and financing in reais, indexed to CDI: In order to reduce the volatility of the cash flow, swap transactions have been made in order to convert to U.S. dollars the cash flow of debt, indexed to the CDI, in loans and financing contracts. In these operations, Vale pays fixed rates in U.S. dollars and receives remuneration in reais linked to the CDI.

Table of Contents

- Protection program of loans and financing in reais, indexed to TJLP: In order to reduce the volatility of the cash flow, swap transactions have been made in order to convert to U.S. dollars the cash flow of debt indexed to the TJLP, in loans and financing contracts with BNDES. In these operations, Vale pays fixed and/or floating rates (Libor) in U.S. dollars and receives remuneration in reais linked to the TJLP.

- Protection program of loans and financing in reais with fixed rates: In order to reduce the volatility of the cash flow, swap transactions have been made in order to convert to US dollars the cash flow of debt denominated in reais at fixed rate in loans contracts with BNDES. In these operations, Vale pays fixed rates in U.S. dollars and receives fixed rates in reais.

- Protection program of loans and financing in reais, indexed to the IPCA. In order to reduce the volatility of the cash flow, swap transactions have been made in order to convert to U.S. dollars the cash flow of debt indexed to the IPCA, in debenture agreements. In these operations, Vale pays fixed rates in U.S. dollars and receives remuneration in reais linked to the IPCA.

- Protection Program for loans and financing in Euros: In order to reduce the volatility of the cash flow, swap transactions were made to convert to U.S. dollars the cash flow of debts in euros... In these operations, Vale receives fixed rates in Euros and pays compensation linked to fixed floating rates in US dollars.

- Exchange hedge program for disbursements in Canadian dollars: In order to reduce the volatility of cash flow, forward operations were made to mitigate the exposure arising out of the unmatched currencies in US dollars revenue and Canadian dollars disbursements.

- Protection program for nickel products operations: The objective of this program is to reduce the risk of decoupling between the price of the nickel products purchase (concentrated, cathode, sinter, and other types) and the sale period of the final product The products purchased are raw material used in the process of production of refined nickel. In this case, operations usually made are the selling of nickel for future liquidation either in the Stock Market (LME) or over-the-counter.

- Sales program for nickel at a fixed price: aiming to maintain revenue exposure to fluctuations in the price of nickel, it has been carried out derivative transactions to convert to a floating-price basis commercial nickel contracts with those clients seeking to fix the price. The operations are intended to ensure that prices for these sales are equivalent to the average price of the London Metal Exchange (LME) upon physical delivery to the customer. Typically, operations made within this program are purchases of nickel for future liquidation, either in the Stock Market (LME) or over-the-counter. These operations are reverted before the original maturity date in order to match

with the dates of liquidation of the commercial contracts that had a fixed price.

- Protection program for selling of copper products: Hedge operations were made in order to reduce the risk of mismatching between the price period of the purchase of copper products (scrap and others). Copper scrap bought is combined with other inputs in order to manufacture copper for final customers. In this case, operations usually made are copper sales for future liquidation either in the Stock Market (LME) or over-the-counter.

- Hedge Program for purchase of fuel oil - Bunker Oil: In order to reduce the impact of fluctuations in the price of fuel oil (Bunker Oil) when procuring freight, and hence reduce the volatility of Company s cash flow, hedge operations were carried out. The operations are usually made by the contracting of future purchases and zero cost-collars.

Hedge Accounting

According to the CPC 38 Financial instruments: acknowledgement and measurement , all derivatives, assigned in hedge relations or not, are recorded in the balance sheet at fair value and gains and losses in fair value are recorded in the current result, unless when qualified as hedge accounting. A derivative should be assigned in hedge to be qualified as hedge accounting. This rule includes determining which portions of hedge are deemed to be effective or non-effective. In general, a hedge relation is effective when a change in fair value is compensated by an equal and contrary change in the fair value of the hedged item. According to this rule, effectiveness tests are run to evaluate the effectiveness and quantify the non-effectiveness of the hedges.

A cash flow hedge is a protection against the exposure to volatility in the expected future cash flow, attributable to a specific risk, as a future purchase or sale. If a derivative is designated as cash flow hedge, the effective portion in the changes of derivative fair value is recorded in other comprehensive income, and recognized in the result when the hedged item affects the period result. The non-effective portion of the changes in derivative fair value designated as hedge is recorded in result. If a portion of the derivative contract is excluded for effectiveness test purposes (for instance the value in time), the value of such excluded portion is included in the result.

iv. Parameters used for managing those risks

The parameters used to check the qualification or disqualification of the Company s exposure are:

Table of Contents

(i) verification of execution of the programs mentioned in 5.2(iii) above;

(ii) analysis and constant monitoring of the contracted volumes, and

(iii) adjustment to the adequacy of maturity dates, taking into account their corresponding protection strategies, guaranteeing the framing of Vale s exposures. The failure to match exposure and protection strategies may occur if:

a. the protection volume S.A.mounts are higher than the respective exposure volume S.A.mounts;

b. the exposure that is protected ends; or

c. the maturity dates of protection strategies and the respective exposures no longer match.

To avoid potential non-matching due to item (iii.a) above, the adopted procedure is a periodic follow up of volume S.A.mounts to be realized used as basis to propose strategy proposals. In the case of protection of input prices, for instance, if consumption updated estimates point to a decrease in volumes compared to initial estimates used to propose protection strategies, protection strategy volumes will be adjusted accordingly.

To avoid potential non-matching due to item (iii.b) above, if during periodic follow up the initial exposure fails to be realized, the protection strategy ends immediately (unwind position).

To avoid potential non-matching due to item (iii.c) above, the company constantly checks the alignment between protection strategies and the initially estimate exposure maturity.

v. If the Company uses various financial instruments with various objectives for asset protection (hedge) and what these goals are

When needed, the company may allocate specific risk limits to management activities requiring those, including, without limitation, limits on market risk, corporate and sovereign risks, according to acceptable limits to corporate risk.

- *Warrants received from the sale of part of Vale s future gold production (by-product):* These warrants are an American purchase option and they were received as part of the payment for the sale of payable gold flows produced

as a byproduct of the Salobo copper mine and of certain Sudbury nickel mines.

- *Debentures purchase options*: The Company has debentures agreements in which lenders have purchase options for a certain amount of common shares issued by the Ferrovia Norte Sul S.A., later amended to shares issued by VLI. The price for the execution of these options corresponds to the outstanding debenture balance in the respective fiscal year dates.

- *Options associated with shares from Minerações Brasileiras Reunidas S.A. (MBR)*: The Company entered into a contract that has options associated with MBR shares. If certain contingent contractual terms that are out of the control of the buyer are observed, such as the illegality arising from changes in legislation, there is a clause in the contract that gives the buyer the right to sell its stake to the Company. In this case, the Company could choose to liquidate through cash or shares. On the other hand, the Company has the right to repurchase this minority stake in the subsidiary.

- Position in embedded derivatives: Vale s cash flow is also vulnerable to market risks associated with contracts that contain embedded derivatives or that work as derivatives. From Vale s perspectives, these include, but are not limited to, commercial contracts, purchase agreements, lease agreements, bonds, insurance policies and loans. The embedded derivatives observed on December 31, 2015 were the following: 1) Purchase agreements for raw materials and nickel concentrate that contain price provisions based on the future price of copper and nickel. These provisions are considered embedded derivatives. 2) Gas purchase for the pelleting company in Oman. The *Companhia de Pelotização Vale Omã* (LLC), a Vale subsidiary, has a natural gas purchase agreement with a clause establishing an award that may be paid if the sale price for Vale s pellet is greater than a specific price pre-determined in the gas supply contract. This clause is considered an embedded derivative, whose fair value and respective value at risk are not material on December 31, 2015.

VI. Organizational structure for risk management control

Market risk management is conducted by the same organizational structure described in item 5.1 (b) (iii) above.

Table of Contents

c. Adequacy of the operational structure and internal controls to verify the effectiveness of the policy adopted

The monitoring and periodic assessment of Vale s consolidated position of financial instruments used to mitigate market risks allow it to keep pace with the financial results and the impact on cash flow and ensure that the goals originally outlined are met. The fair value calculation of the positions is made available monthly for management monitoring.

To this effect, the back-office, part of the General Board of Financial, monitors these financial instruments, and it is responsible for confirming the financial characteristics of transactions as well as the counter-parties with which the operations were performed, report the fair value of the positions. This area also assesses whether the operations were performed according to internal approval given. As well as this area, the area of internal controls, acts to verify the integrity of the controls that mitigate risks in the contracted transactions within the above mentioned governance criteria. Additionally, internal audit also participates in the compliance process with regulations.

Table of Contents

5.3. - In regards controls adopted by the issuer to ensure the preparation of reliable financial statements, indicate:

a. The main practices of internal controls and the degree of efficiency of such controls, indicating possible flaws and steps taken to correct them.

Vale administration 1assessed the effectiveness of the Company s internal control relative to the financial statements through processes designed to provide reasonable assurance regarding the reliability of financial statements and financial reports, in compliance with the criteria established in Internal Control Integrated framework 2013 issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

The internal control assessment process provides the mapping of the processes, risk assessment, as well as the allocation of applicable controls aimed at mitigating the risks that can affect the ability of the Company to initiate, authorize, register, process and disseminate relevant information in the financial statements.

Additionally, Internal Controls Management interacts with the Internal Audit department and the Ombudsman s Office to capture any events that could impact the financial statements.

At the end of the fiscal year, based on tests performed by the Administration during the entire period, no relevant flaws were identified in the implementation of controls. Still, during the year, any identified flaws in the implementation of controls, are corrected through the application of action plans to ensure its correct implementation at the end of the financial year.

b. Organizational structures involved

Vale S.A. has an organizational structure of internal controls to ensure the preparation of reliable financial statements consisting of an Internal Controls Management that is subject to the Global Controller Board, which, in turn, is subordinate to the Finance and Investor Relations Executive Board, of with its monitoring of the Audit Committee. The Internal Audit Department and the Ombudsman Office are also part of the process, and they are both subordinate to the Board of Directors. The roles and responsibilities of each are described in item 5.1 (b) (iii).

c. Whether and how the efficiency of internal controls is supervised by the issuer s administration, indicating the position of the people responsible for provided for monitoring

As part of the annual certification process of the internal control environment, the Administration promotes the revision of all controls with the effective participation of all Departments involved in the processes, aimed at the pursuit of effective the controls.

At the end of the cycle, the executives in charge of the processes of all business areas and support areas at the Company, mapped on the controls and adequacy test to the Sarbanes-Oxley, signed sub-certificate that support the environmental assessment of internal controls as well as the publication of the financial statements.

Additionally, it should be noted, that it is the responsibility of Vale s Supervisory Board to oversee the internal control assessment process run by the Administration for the preparation of the accounting reports and by the independent auditors (KPMG Auditores Independentes), through regular meetings where the results of the work developed by the Internal Control Management are reported together with their respective remediation plans established by those in charge of the process.

d. Weaknesses and recommendations on internal controls present in the detailed report are prepared and sent to the company by the independent auditor.

The independent auditors have not reported any significant weaknesses in internal controls, accounting, fiscal procedures and of information technology report for the year ended on December 31, 2015 in letter issued on April 22, 2016.

e. Comments from the officers on weaknesses pointed out in the detailed report prepared by the independent auditor and the corrective measures adopted.

The Company officers made an assessment based on relevance, probability, and potential magnitude of distortions reported by the independent auditor. They concluded that the action plans defined for these weaknesses are appropriate for the implementation of the recommendations made by the Auditors, noting that, as described in item (d) above, the independent auditors did not report any significant weaknesses.

Table of Contents

5.4 - Significant changes in the main risks to which the Company is exposed or in the risk management policy adopted, pointing out possible expectations of reduction or increase in the Company s exposure to such risks

Relative to the last fiscal year, it was included in the list of main risks to which the Company is exposed risks resulting from the rupture of Samarco s tailings dam of Samarco and the market risks related to political and economic instability in Brazil, as described in items 4.1 and 4.2 of this Reference Form. There have been no significant changes in the risk management policy adopted.

Additionally, the Company has not identified significant increases or reductions of the risks already mentioned in items 4.1 and 4.2 of this Reference Form.

Table of Contents

5.5 Other relevant information

In line with the integrated view of risks exposure, Vale considers in risk management, additionally to market risks management, liquidity risk, the risk from the obligations assumed by third parties to the Company (credit risk), those inherent to inappropriate and deficient internal processes, personnel, systems or external events (operational risk), and others.

Credit Risk of Counterparties

Vale s credit risk of counterparties arises from potential negative impacts in its cash flow due to uncertainty in the ability of having counterparts meet their contractual obligations, forward sales, transaction with derivatives, warrants, advancement payments to suppliers, and cash investments. To manage that risk, Vale has procedures and processes, such as approval and credit limits control, obligatory exposure diversification through several counterparts and monitoring the portfolio s credit risk, which provide a structure to evaluate and manage the credit risk of counterparties and maintain the risk above the acceptable levels.

Vale s counterparts may be divided into three categories: clients, responsible for obligations represented by receivables related to sales in installments; financial institutions with whom Vale maintains its cash investments or acquires transactions with derivatives; and suppliers of equipment, products and services, in case of anticipated payments.

Regarding credit risk, the Company adopts the following management standards:

Credit Risk Assessment for commercial operations (sales to customers)

For the commercial credit risk, which arises from sales of products and services to final customers, the management of Market Risk Management and Credit of the Treasury and Finance Board, according to current powers, approves or requests the approval of credit risk limits for each counterpart.

Vale attributes an internal credit risk classification and a credit limit for each client based on a credit risk assessment quantitative method. This methodology is based on market prices, external credit classifications and financial information of the counterparty, as well as qualitative information regarding the strategic position and history of the counterparties commercial relationship.

Depending on the counterpart s credit risk or the consolidated credit risk profile of Vale, risk mitigation strategies are used to minimize the Company credit risk in order to achieve the acceptable risk profile approved by the Executive Board. The main credit risk mitigation strategies include discount from non-collateralized receivables, insurance contracts, collateral, credit letter and corporate and bank collaterals.

Vale has a well-diversified accounts receivable portfolio from a geographical standpoint, China, Europe, Brazil and Japan being the regions with more significant exposures. According to each region, different guarantees can be used to enhance the credit quality of the receivables.

The Company controls its account receivables portfolio through Credit Management and Cash Collection committees, in which representatives from risk management, cash collection and commercial departments periodically monitor each counterpart position. Additionally, Vale maintains credit risk systemic controls that block additional sales to counterparts with past due receivables or exposures that exceed approved limits.

The Credit and Collection Management Committees are internal committees of the Company, that were not established by the Board of Directors or the Company By-Laws, and which purpose is not the deliberation or consultation of Vale s managing bodies.

Credit Risk Assessment for treasury operations (cash flow investments and derivative operations)

The control of the exposure from cash investments and derivatives instruments is done through the following procedures: annual approval by the Executive Board on credit limits by counterpart, control of portfolio diversification, counterparts spread variations and overall credit risk of treasury portfolio. There is also a monitoring of all positions, control of exposure versus limits, and periodical reporting to the Executive Board for Risk Management.

The calculation of exposure to a specific counterpart that has derivative transactions with Vale, we consider the sum of exposures of each derivative acquired with this counterpart. The exposure for each derivative is defined as the future value calculated by the due date, considering a variation of market risk factors affecting the value of the derivative instrument.

Table of Contents

Vale also uses a risk assessment classification to evaluate the counterparts in treasury operations, following a method similar to that used for commercial credit risk management, for purposes of calculating the possibility of counterpart default.

According to the type of counterpart, different variables are used: i) the expected default frequency; ii) credit spreads found in CDS (*Credit Default Swaps*) or in the Bond Market; iii) credit ratings attributed by the main international rating agencies; and iii) client s financial statements to make an economic-financial analysis based on financial indicators.

Liquidity Risk

The liquidity risk arises from the possibility that Vale might not perform its obligations on due dates, as well as face difficulties to meet its cash flow requirements due to market liquidity constraints.

To mitigate such risk, Vale has a revolving credit facility to help manage short term liquidity and to enable more efficiency in cash management, being consistent with the strategic focus on cost of capital reduction. The revolving credit lines available were acquired from a syndicate of several global commercial banks

Capital Management

The Company s capital management policy aims to find a structure that ensures the continuity of its businesses in the long term. In this view, the Company has been able to generate value to its shareholders, through the payment of dividends and capital gains, while it maintains an appropriate debt profile applicable to its activities, with average amortization term of 9.1 years, thus avoiding concentration in one specific period.

Insurance

Vale acquires several types of insurance policies, including: operational risk insurance, engineering (project) insurance, credit risk insurance, liability, life insurance for employees, etc. The coverage of these policies, similar to those used in general in the mining industry, are acquired according to Company s defined goals, the corporate risk management practices and limitations imposed by the global insurance and reinsurance markets.

Insurance management is done with the support of insurance management committees existing in different operational areas of the Company. Management instruments used by Vale include captive reinsurers that allow for the retention of part of the risk, acquiring insurances on competitive basis, as well as direct access to the main insurance and reinsurance international markets and diversification of counterparts.

6.1/6.2/6.4 Establishment of the Company. Company Lifetime and Date of Filing with CVM

Date of Establishment of Issuer	01.11.1943
Legal Form of the Issuer	Mixed economy Company
Country of Establishment	Brazil
Company Lifetime	Company lifetime Undetermined
Date of Filing with CVM	01.02.1970

6.3 Brief History

Vale was initially founded by the Brazilian Federal Government (Government of Brazil) on June 1, 1942, through Decree-Law No. 4352, and definitively on January 11, 1943, by the Assembly for the Definitive Constitution of the Companhia Vale do Rio Doce S.A., in the form of mixed economy company, aiming to mine, trade, transport and export iron ore from the Itabira mines, and run the Vitória-Minas Railroad (EFVM), which carried iron ore and agricultural products from Vale do Rio Doce, in south-eastern Brazil, to the port of Victoria, located in Espírito Santo.

The privatization process was initiated by the Company in 1997. Under Privatization Decree PND-A-01/97/VALE and the Resolution of the National Privatization Council - CND paragraph 2, of March 5, 1997, the Extraordinary General Assembly approved on April 18, 1997 the issue of 388,559,056 participatory non-convertible debentures, with a view to guaranteeing its pre-privatization shareholders, including the Federal Government itself, the right to participation in revenues from Vale s and its subsidiaries mineral deposits, which were not valued for purposes of fixing the minimum price in the auction for the privatization of Vale. The Participatory Debentures were allocated to the shareholders of Vale in payment of the redemption value of preferred class B shares issued as bonus, in the proportion of one share owned by holders of class A common and preferred shares at the time, through the part capitalization of Vale s revenue reserves. The Participatory Debentures could only be traded with prior

Table of Contents

authorization of the Securities Commission (CVM), as of three months from the end of Secondary Public Offering of Shares under the privatization process.

On May 6, 1997 the privatization auction was held, when the Brazilian government sold 104,318,070 Vale common shares, equivalent to 41.73% of the voting capital for Valepar SA (Valepar), for approximately R$ 3.3 billion.

Later, under the terms of the Bid, the Brazilian government sold another 11,120,919 shares representing approximately 4.5% of the outstanding common shares and 8,744,308 class A preferred shares, representing 6.3% of class A shares in circulation, through a limited offer to the employees of Vale.

On March 20, 2002 a Secondary Public Offering of Shares issued by Vale was held, in which the Brazilian Government and the National Bank for Economic and Social Development (BNDES) each sold 34,255,582 Vale common shares. The demand by investors in Brazil and abroad was substantial, exceeding supply by about three times, which led to the sale of the entire batch of 68,511,164 shares. A portion of about 50.2% was posted in the Brazilian market and the remainder was sold to foreign investors. Later, on October 4, 2002, the proper certification of the Participatory Debentures was obtained from CVM allowing their trading on the secondary market.

140

Table of Contents

The following describes the most significant historical events in the history of the Company since its incorporation:

1942

• President Getulio Vargas, by Decree-Law nº 4352 of June 1, 1942, sets out the basis on which Companhia Vale do Rio Doce SA would be organized. By Decree-Law, the Brazilian Company for Mining and Metallurgy and Mining Company Itabira would be expropriated.

1943

• Vale is constituted on January 11, 1943, as mixed economy Company, pursuant to Decree-Law nº 4.352/42.

• Listing of Vale shares on the Rio de Janeiro Stock Market (BVRJ) in October 1943.

1944

• First business with Vale shares on the BVRJ occurred in March 1944.

1952

• The Brazilian Government takes definitive control of Vale s operational system.

1953

• First shipment of iron ore to Japan.

1954

• It revises its business practices abroad, and proceeds to directly contact steel mills, without the intermediation of traders.

1962

• Signed long-term contracts with Japanese and German steel mills.

1964

• Opening of Vale s first office outside of Brazil in Dusseldorf, Germany.

1966

• Opening of the Port of Tubarão, in Vitória, in Espírito Santo. This is connected to the iron ore mines by the Vitoria to Minas Railroad.

1967

• Geologists of the Southern Mining Co., a subsidiary of United States Steel Corp. (U.S. Steel), record the occurrence of iron ore in Carajás, Pará State.

Table of Contents

1968

• Vale shares become part of the IBOVESPA index.

1969

• Inauguration of Vale s first Pellet Plant in Tubarão, in Espírito Santo, with capacity for 2 million tons/year.

1970

• Agreement makes Vale the majority shareholder of the Carajas venture in Para State, along with U.S. Steel.

1972

• Vale signs agreement with Alcan Aluminum Ltd. of Canada for a project to mine bauxite in Rio Trombetas, where Mineração Rio do Norte (MRN) was set up.

1974

• Vale becomes the largest exporter of iron ore in the world, with 16% of seaborne iron ore market.

1975

• For the first time, Vale issues bonds in the international market, worth 70 million marks, with the intermediation of Dresdner Bank.

1976

• Decree No. 77.608/76 grants Vale the concession to construct, use and operate the railroad between Carajás and São Luís, in Pará and Maranhão States, respectively.

1977

• Vale announces priority for the Carajas Project, in order, from 1982, to start the export of iron ore through the Port of Itaqui (MA).

1979

• Beginning of the effective implementation of the Carajás Iron Ore Project, adopted as the main goal of Vale s business strategy.

1980

• Federal Government approves the Carajas Iron Project and gives financial backing.

1982

• With the start of Valesul Aluminio SA operations in Rio de Janeiro, Vale joins the aluminum sector and helps to reduce imports of the metal into Brazil.

1984

• Inauguration of Vale office in Japan.

1985

• On February 28, the Carajás railroad (EFC) is inaugurated and handed over to Vale.

• Inauguration of the Carajás Iron Ore Project, which increases the productive capacity of the company, now organized in two separate logistic systems (North and South).

1986

• Start of operation of the Port Terminal of Ponta da Madeira, in São Luís in the State of Maranhao.

1987

• The EFC begins operating on a commercial scale.

1989

• Implementation of the Profit Sharing Program (PR) for Vale employees.

1994

• In March, Vale launches its program for American Depositary Receipts (ADR) Level 1, negotiable on the OTC market of the United States.

Table of Contents

1995

• Vale is included in the National Privatization Program by Decree No. 1510 of June 1, signed by the President.

1996

• On October 10, the National Privatization Council (CND) approves the model for privatization of Vale.

1997

• BNDES releases on March 6, the terms of the bidding for the privatization of VALE.

• On April 18, Vale issues 388,559,056 Participatory Debentures that can only be traded with prior authorization of the CVM, as of three months from the end of Secondary Public Offering of Shares under the terms of the privatization process.

• On May 6, Vale is privatized in an auction held at the Stock Exchange of Rio de Janeiro. Valecom consortium, put together by the Votorantim Group, and the Brazil Consortium, led by Companhia Siderurgica Nacional (CSN) took part in the auction. The Brazil Consortium buys 41.73% of common shares of VALE for US$ 3,338 million at present-day values.

1998

• In the first year after privatization, Vale reaches 46% growth in profit over 1997.

1999

• It has the largest profit in its history so far: US$ 1.251 billion.

2000

• On February 2, Vale opened the Container Terminal of the Port of Sepetiba.

• In May, Vale acquires Mineração Socoimex S.A. and S.A. Mineração da Trindade (Samitri), companies producing iron ore, initiating the consolidation of the market for Brazilian iron ore.

• On June 20, Vale announced the listing of its ADRs, representing preferred shares of the Company on the New York Stock Exchange (NYSE) in a DR Level II program approved by the CVM.

• On August 31, the Extraordinary General Meeting approves the merger of a wholly owned subsidiary Mineração Socoimex S.A, without issuing new shares, aiming to add to the assets of the Company the Gongo Soco mine, with reserves of high-grade hematite in the iron quadrangle in Minas Gerais.

2001

• In February, the Board of Directors of Vale authorizes the start of the process of divesting its holdings in the sector of pulp and paper.

•On February 19, the shares of S.A. Mineração da Trindade (Samitri) are incorporated by Vale, with no increase of capital and without issuing new shares, by using shares held in treasury, as authorized by the CVM.

• In March, shareholdings involving Vale and CSN are unwound.

• In April, Vale acquires 100% shareholding in Ferteco Mining SA, the third largest producer of iron ore in Brazil at the time.

• On October 1, the General Assembly of Shareholders approves the incorporation of wholly owned subsidiary S.A. Mineração da Trindade (Samitri), in line with guidelines for administrative and financial streamlining.

2002

• In March, the pellet plant in Sao Luis, in Maranhão state, is officially opened.

• On March 21, the comprehensive sale offer of 68,511,164 Vale common shares owned by the Brazilian Government and BNDES is concluded, of which approximately 50.2% was placed in the Brazilian market and the remainder sold to outside investors. The selling price in Brazil was R$ 57.28 per share and abroad US$ 24.50 per ADR.

• Vale common shares start to be traded on the NYSE in the form of ADRs, in program level III.

• The Company s common shares also start to be traded on the Madrid Stock Exchange - Latibex.

• The foundation stone of the Sossego Copper Project, State of Pará, is laid.

• On October 4, VALE obtains from the CVM the registration of Publicly Traded Participatory Debentures.

• On December 16, the General Assembly of Shareholders approves Vale s Dividend Policy in order to increase both transparency and financial flexibility, taking into account the expected path of the Company s cash flow.

• On December 27, the Extraordinary General Meeting approves the Amendment to the Bylaws in order to (i) expand the Company s activities in energy and logistics, (ii) adjust the Statutes to the new rules introduced by Law No. 10303 of October 31, 2001 and (iii) introduce the principles of best corporate governance practices.

2003

• On February 14, Vale completes the acquisition of 100% stake in Elkem Rana AS (Rana), a Norwegian producer of ferroalloys, for the price of US$ 17.6 million.

• On March 31, Vale acquires 50% stake in Caemi Mineracao e Metalurgia S.A. (Caemi) for US$ 426.4 million.

• On August 29, Vale incorporates the wholly owned subsidiaries Celmar S.A. - Indústria de Celulose e Papel S.A. and Ferteco Mineração S.A.

Table of Contents

• On November 7, Vale completes the restructuring of shareholdings in logistics companies, which was aimed at the elimination of the relationship between Vale and CSN in the shareholding structure of the Ferrovia Centro-Atlantica SA (FCA), Companhia Ferroviária do Nordeste (CFN) and CSN Aceros S.A. (CSN Aceros).

• On December 12, Vale adheres to Level 1 of the Program for Differentiated Corporate Governance Practices established by the BM&F Bovespa Exchange.

• Continuing the process of simplifying its operating structure, on December 30, Vale incorporates the following wholly owned subsidiaries: Rio Doce Geologia e Mineração S.A. Docegeo (Docegeo), Mineração Serra do Sossego S.A. (MSS), Vale do Rio Doce Alumínio S.A. Aluvale (Aluvale) and Mineração Vera Cruz S.A. (MVC).

2004

• On July 02, the Sossego mine, the first copper mine in Brazil, opens in the State of Pará. This project was completed in record time.

• In November, Vale wins an international bidding for coal mining in the Moatize region of northern Mozambique.

• In December, Vale signs a memorandum of understanding with ThyssenKrupp Stahl AG (ThyssenKrupp) for the construction of an integrated steel slab plant with a capacity of 5 million tons in the State of Rio de Janeiro.

2005

• Vale is the first Brazilian company to achieve a risk score greater than the host country and the only one to have this recognition for three different rating agencies: reaching, thus, Investment Grade , given by Moody s, and confirmed by Standard & Poor s and Dominion Bond.

• In July, Vale Belvedere Pty Ltd. signs an agreement with two Australian mining companies to carry out studies to exploit the Belvedere Underground Coal Project, located in the State of Queensland, Australia.

• On September 22, it launches *Vale Investir* , a program that allows investors to automatically reinvest Brazilian funds from shareholders payments - dividends and/or interest on capital - to buy shares of the Company.

• In November, Vale agrees to acquire a minority stake in Ceara Steel, a steel slab project aimed at exporting from the State of Ceará, with a nominal capacity of 1.5 million tons of slabs per year.

• The Company consolidates its entry into the copper concentrate industry, with the first full year of operation of the Sossego Mine and sales to 13 customers in 11 different countries.

• In the last quarter of 2005, Vale acquires 99.2% of Canico Resources Corp. (Canico), which owns the lateritic nickel project Onça Puma, located in Para State, for approximately US$ 800 million.

2006

• In January, Vale acquires mineral resources, land and mining equipment from the Rio Verde Mineração (Rio Verde) for US$ 47 million.

• In February, the acquisition of all shares of Canico is completed, these being removed from trading on the Toronto Stock Exchange.

• In March, it inaugurated the expansion of production capacity is inaugurated of alumina refinery Alunorte - Alumina do Norte do Brazil S.A. (Alunorte), located in Barcarena in the State of Pará.

• On May 3, Vale completes incorporation of shares of Caemi, now holding 100% of the shares.

• On July 3, Vale buys 45.5% stake in Valesul Aluminio S.A. and now owns 100% of the shares.

• On August 11, the Company announces that it intends to offer to acquire all common shares of Inco Limited (Toronto Stock Exchange - TSX and NYSE under the symbol N) (Inco). The offer is consistent with long-term corporate strategy and strategy for the non-ferrous metals business of Vale.

• In the third quarter, Vale divides the administration of former Southern System for production and distribution of iron ore into two departments: the South-eastern System and the Southern System, and began to report production separately for each system.

• In September, Minerações BR Holdings GmbH buys 25% stake in a joint venture, Zhuhai YPM, to build a new pellet plant in Zhuhai, in the region of Guandong, China.

• On October 5, Vale opens the Brucutu Project, the largest mine/plant complex in the world for initial production capacity of iron ore, located in São Gonçalo do Rio Abaixo in Minas Gerais.

• On October 26, Vale concludes the financial settlement of a major part of the acquisition of Canadian miner Inco Ltd., the second largest nickel producer in the world, effecting payment of US$ 13.3 billion for the purchase of 174,623,019 shares issued by Inco. On November 6, Vale joins the control group of Usinas Siderúrgicas de Minas Gerais S.A. - Usiminas.

2007

• In January, Vale completed the expansion of iron ore production capacity in Carajás, which now reaches 100 million tons per year.

• On January 30, the acquisition of Inco (now Vale Canada Limited) is ratified at Vale Extraordinary General Meeting. The nickel business is now managed from Toronto as well as activities related to marketing and sales of metals. With the completion of its acquisition of Inco, Vale becomes the second largest mining and metals company in the world by market value.

• On February 16, Vale announces secondary public offering of shares of Log-In Logistica Intermodal SA (Log In).

Table of Contents

• On February 26, Vale signs a sale and purchase agreement to acquire the Australian AMCI Holdings Australia Pty Ltd. (AMCI), which operates and controls coal assets through holdings in joint ventures.

• In March, Vale acquires an 18% stake in Ferro-Gusa Carajás S.A. (FGC), which belonged to Nucor do Brasil S.A for 20 million dollars, and now holds a 100% stake in FGC.

• In May, Vale signs a usufruct contract, and now controls the entire capital of the MBR, for the following 30 years.

• On May 2, Vale signs a freight contract for 25 years with Bergesen Worldwide (B.W. Bulk), which provides for the construction of the four largest bulk carriers in the world, each with a capacity of 388 thousand tons.

• On June 28, the Government of Mozambique approved the mining contract for the operation, by Vale, of the Moatize coal project in the province of Tete in the northwest of the country.

• On August 30, shareholders meeting at an Extraordinary General Meeting, ratify the acquisition of control of AMCI by the Company.

• On November 29, Vale begins to use the brand Vale in all countries where it operates and at the same time takes on a new global identity.

• On December 21, Vale signs an agreement for commercial exploitation for 30 years of 720 km of the Norte-Sul Railroad (FNS).

2008

• In the first half of 2008, Samarco, a (50% -50%) joint venture with BHP Billiton in the Brazilian State of Espírito Santo, becomes operational with a pellet production capacity increase.

• Vale leases three pellet plants in the Tubarão complex, in Vitória, State of Espírito Santo, owned by the JV s in which it participates (Itabrasco, Kobrasco and Nibrasco).

• On May 5, Vale signs a sale and purchase agreement to acquire the mining and surface rights in the municipalities of Rio Acima and Caeté, State of Minas Gerais.

• In July, Vale makes a global offering of 256,926,766 ordinary shares and 189,063,218 preferred shares, including ADSs, in order to promote investment and strategic acquisitions as well as maximizing the financial flexibility of the Company. The aggregate value of Vale s global offer, after underwriting discounts and commissions, including the values of the exercise of further stock options, was US$ 12.2 billion. In August, exercising the option of complementary lot, Vale issues 24,660,419 class A preferred shares.

• In connection with the offer above, Vale lists and trades its common and preferred ADSs on Euronext Paris.

• On August 3, Vale orders the building of 12 large ships for carrying iron ore, buys used vessels and signs long term freight contracts. The total investment was US$ 1.6 billion for the construction of new ships and US$ 74 million for

the purchase of used ships.

• On August 14, Vale announces its intention to invest in building a new steel plant in Marabá in Para State, with an annual production capacity of 2.5 million metric tons of semi-finished steel.

• On October 31, Vale announces a reduction in its rate of production of iron ore, pellets, nickel, manganese, ferro-alloys, aluminum and kaolin, in the face of the impact of global economic crisis on the demand for minerals and metals.

• On December 16, Vale signs with African Rainbow Minerals Limited (ARM) and its subsidiary TEAL Exploration & Mining Incorporated (TEAL) a contract providing for the acquisition of 50% of the capital of a joint venture to hold TEAL subsidiaries for CAD $ 81 million, therefore increasing the strategic options for Vale to grow in the copper business in Africa.

• On December 23, Vale signs a sale and purchase agreement to acquire 100% of the coal exporting assets of Cementos Argos SA (Argos) in Colombia for US$ 306 million.

2009

• On January 30, Vale signs with Rio Tinto plc (Rio Tinto) a sale and purchase agreement for the acquisition, through cash payment, of iron ore and potash assets, located in Brazil, Argentina and Canada.

• On March 24, Vale completes the previously announced transaction, and creates a 50%-50% joint venture with ARM for future development and operation of the assets of TEAL, expanding in December 2008 the strategic options for growth in the copper business in Africa.

• On March 27, Vale initiates the construction of the Moatize project, in Tete province, Mozambique.

• On April 1, the Company concluded the acquisition of the assets of export thermal coal with Argos in Colombia.

• On April 16, Vale completes the sale of all of its 14,869,368 common shares issued by Usiminas and linked to the steel mill s existing shareholders agreement.

• On May 21, the Board of Directors of Vale approve the revised 2009 investment budget for US$ 9.035 billion as compared with the US$ 14.235 billion announced on October 16, 2008.

• On May 22, the Extraordinary General Meeting of Vale approves the proposal to change its name from Companhia Vale do Rio Doce SA to Vale SA.

• On June 23, Vale launches a project to produce biodiesel to fuel its operations and projects in northern Brazil, to begin in 2014, using palm oil (dende oil) as feedstock, which will be produced by a consortium between Vale and Biopalma Amazonia SA (Biopalma).

• On July 13, the Company announces that its unionized employees in Sudbury and Port Colborne in Ontario, Canada, are on strike. The same happens on the 1st of August, with the unionized employees of its operation in Voisey s Bay in the province of Newfoundland and Labrador, Canada.

145

Table of Contents

• On July 22, Vale signs a memorandum of understanding (MOU) with ThyssenKrupp to raise its stake in ThyssenKrupp CSA Siderurgica do Atlantico Ltda. (TKCSA) from 10% to 26.87% through a capital injection of EUR $ 965 million.

• On September 18, Vale completes the acquisition of the operations of iron ore in Corumbá, located in Mato Grosso do Sul, owned by Rio Tinto and other controlled entities.

• On October 19, the Board of Directors of Vale approves the investment budget for 2010, including expenditures of US$ 12.9 billion dedicated to sustaining existing operations and promoting growth through research and development (R & D) and project execution.

2010

• On January 22, integrated subsidiary Valesul Alumínio S.A. (Valesul) enters into an agreement to sell its aluminum assets located in Rio de Janeiro to Alumínio Nordeste S.A., a Metalis group company, for US$ 31.2 million.

• On the same date, Vale approves at a Special Shareholders Meeting the incorporation of integrated subsidiaries Sociedade de Mineração Estrela de Apolo S.A. (Estrela de Apolo) and Mineração Vale Corumbá S.A. (Vale Corumbá).

• During the first half of the year, Vale closes agreements with its customers in the iron ore business to shift from annual contracts to contracts with values adjusted on a quarterly basis. The new contracts offer more efficiency and transparency for iron ore prices and make it possible to differentiate qualities, which help stimulate long-term investment. Besides, customers can learn in advance the price to be paid in the following quarter.

• In the second quarter, Vale acquires a 51% interest in VBG - Vale BSGR Limited (VBG) (formerly BSG Resources (Guinea) Limited), which used to hold iron ore concession rights in Simandou South (Zogota) and iron ore exploration permits in Simandou North (Blocks 1 & 2), Guinea.

• Through a series of transactions in 2010, Vale acquires the phosphate operations of Vale Fertilizantes S.A. (Vale Fertilizantes , formerly Fertilizantes Fosfatados S.A. Fosfertil) and Vale Fosfatados S.A. (formerly Bunge Participações and Investimentos S.A.). The total cost of these acquisitions was US$ 5.829 billion. The sellers included Bunge Ltd., the Mosaic Company (Mosaic), Yara Brasil Fertilizantes S.A. and other Brazilian companies.

• In May, Vale Internacional S.A. enters into an agreement with Oman Oil Company S.A.O.C. (OOC), an integrated subsidiary of the government of the sultanate of Oman, for the sale of a 30% interest in Vale Oman Pelletizing Company LLC (VOPC), for US$ 125 million.

• In July, Vale sells to Imerys S.A. 86.2% of its interest in Pará Pigmentos S.A. (PPSA), a kaolin producer, along with other kaolin mining rights, for US$ 71.3 million (equivalent to R$ 126.1 million).

• In July, Vale concludes the transaction announced on March 31, 2010, by virtue of which it sells 35% of the total capital of MVM Resources International B.V. (MVM) to Mosaic for US$ 385 million, and 25% of the total capital of MVM to Mitsui, for US$ 275 million. MVM manages and operates Bayóvar phosphate rock project in Peru.

• In August, Vale Emirates Ltd. acquired 51% interest in Sociedade de Desenvolvimento do Corredor Nacala S.A. (SDCN) from the Mozambican company Insitec SGPS SA (Insitec) for US$ 21 million (equivalent to R$ 36.6 million on the date of disbursement).

• In November, Vale acquired shares from the Bacia do São Francisco blocks (SF-T-80, 82, 83, and 93)

• In the fourth quarter, Vale lists Depositary Receipts representing its common and preferred Class A shares (HDRs) on Hong Kong Limited Stock Exchange (HKEx). The HDRs start to be traded on December 8, 2010.

2011

• On February 28, Vale announces the completion of the operation with Norsk Hydro ASA (Hydro), announced on May 2, 2010, to transfer all its interests in Albras - Alumínio Brasileiro S.A. (Albras), Alunorte and Companhia de Alumina do Pará (CAP), receiving in return, through the subsidiary Vale Austria Holdings GmbH, currently known as Vale International Holdings GmbH (Vale Austria), 22% of the outstanding common shares of Hydro and US$ 503 million in cash. Additionally, Vale Austria sold 60% of Mineração Paragominas S.A. (Paragominas) to Hydro for US$ 578 million in cash. For more information about these operations, see item 6.5 in this Reference Form.

• In February 2011, Vale pays US$ 173.5 million to acquire the control of Biopalma, in the State of Pará, to produce palm oil (dende oil) as feedstock to manufacture biodiesel.

• On April 28, the Board of Directors approves the acquisition, subject to certain conditions, of up to 9% of the capital of Norte Energia S.A. (NESA), a stake previously held by Gaia Energia e Participações S.A (Gaia). NESA is a company whose sole purpose is the implementation, operation and management of Belo Monte hydroelectric power plant in Pará. In June 2011, Vale concluded the acquisition of 9% of the equity of NESA.

• In June 2011, Vale Emirates Ltd. acquired additional 16% equity of. SDCN for US$ 8 million, equivalent to R$ 12.8 million. The acquisition is aligned with the Company strategy to develop the logistic corridor of Nacala, and continued with the acquisition of 51% of SDCN in September 2010. SDCN has a concession to create the required logistic structure for the flow resulting from coal production expansion in Moatize.

• In July 2011, Vale Logística Integrada S.A. (current VLI S.A.) signed an agreement to create a joint venture with Vale Fertilizantes for purposes of exploring the concession of Terminal Portuário da Ultrafértil (TUF), in the city of Santos, State of São Paulo, with imported cargos of sulfur, ammonia and fertilizers in general, being strategically linked to Vale s railroads, upon payment of R$150 million to Vale Fertilizantes and capital investment in the joint venture of R$432 million to fund TUF investment project.

Table of Contents

• In December 2011, Vale concluded, by its wholly-owned subsidiary Mineração Naque S.A. a public offer auction (IPO) to acquire outstanding shares issued by Vale Fertilizantes. As a result of the IPO, Vale acquired 211,014 common shares and 82,919,456 preferred shares issued by Vale Fertilizantes, representing 83.8% of outstanding common shares and 94.0% outstanding preferred shares of Vale Fertilizantes. Common and preferred shares were acquired by the par value of R$25.00, in a total amount of R$2.078 billion.

2012

• On February 9, the Board of Directors approved the execution of a lease agreement of potassium mining rights and assets with Petróleo Brasileiro S.A. Petrobras, for 30 years, which allows continuing with potassium extraction in Taquari-Vassouras and development of the Carnalita Project in the State of Sergipe.

• In April, Vale sold its 61.5% interest in Cadam S.A. to Kamin LLC, concluding the divestment operation by selling the kaolin business beginning in 2010 with the sale of the interest in Pará Pigmentos S.A.

• In June, together with Vale Internacional Holding GmbH and Vale Internacional S.A., Vale concluded the sale of its thermal coal operations in Colombia to CPC S.A.S., an affiliated company of Colombian Natural Resources S.A.S. (CNR), for US$ 407 million in cash.

• In May, Vale entered into an operational lease with its affiliate Hispanobras, where Vale leases its pelleting plants owned by Hispanobrás for three years, subject to automatic renewal. The operation was concluded in July 2012.

• On June 7, Vale Emirates Ltd. acquired an additional 18% interest in SDCN, holder of the concessions to create the logistic corridor of Vale in Nacala, Mozambique, for US$ 18.5 million. Consequently, Vale held at the time 85% of the shares of SDCN.

• On June 27, Vale was granted the prior license (LP) for the iron ore project Carajás S11D, the largest project in the history of Vale, and the largest project in the history of iron ore, with nominal capacity of 90 million annual metric tons (Mtpa) of iron ore. The LP is part of the first phase of licensing of this enterprise. This license signals the approval of its location, conception, and environmental feasibility, establishing the basic requirements to be complied with in the subsequent deployment phase.

• In August, Vale Internacional has informed that it signed a sale agreement for US$ 600 million for 10 large ore carriers with Polaris Shipping Co. Ltd. (Polaris).

• In October, Vale and Vale International completed the sale of its manganese and ferroalloy operations in Europe to subsidiaries of Glencore International Plc. (Glencore), for US$ 160 million in cash. Vale also retained Glencore as its marketing agent outside Brazil for metallurgic manganese ore for a five-year period.

• On October 4, the first copper concentrate was produced, upon conclusion of the commissioning of the copper mine processing plant in Lubambe, in the Konkola North project, that includes an underground mine, plant, and related infrastructure, located in the copper belt in Zambia, with estimate nominal capacity of 45,000 metric tons per year of copper concentrate. This operation is part of a joint venture with ARM, holding 80% of the operation, and the remaining 20% is held by Zambia Consolidated Copper Mines Ltd.

• On December 20, Vale concluded the annual evaluation of Onça Puma and aluminum assets, implying recognition of the impairment before tax of US$8.2 billion, with accounting impact on 2012 4Q.

2013

• On January 31, Vale concluded the option exercised in June 2010, acquiring an additional 24.5% interest in the Belvedere coal project (Belvedere) from Aquila Resources Limited (Aquila), for A$150 million (equivalent to US$ 156 million using the AUD/USD rate of 1.04). As a whole, Vale paid US$338 million for 100% of Belvedere. Belvedere is comprised of an underground coal mine located in the South of Bowen Basin, close to the town of Moura, in the State of Queensland, Australia.

• On February 28, Vale concluded the final agreements with Silver Wheaton Corp. (SLW), Canadian company with shares negotiated at the Toronto Stock Exchange and the NYSE, to sell 70% of payable gold flows produced as byproduct of some Sudbury nickel mines for 20 years and with Silver Wheaton (Caymans) Ltd. to sell 25% of payable gold flows produced as byproduct of the Salobo copper mine during the mine lifetime, for the initial payment of US$ 1.9 billion in cash, 10 million in SLW warrants with exercise price of US$ 65 and 10 year term. Additionally, Vale will receive cash payments in the future for each ounce (oz) of gold provided to SLW under the terms in the agreement, at the lowest value between US$ 400 per ounce (plus annual inflation adjustment of 1% starting in 2016 for Salobo) and the market price.

• On March 11, Vale informed the Government of the Republic of Argentina that the company had suspended deployment of the Rio Colorado project in Argentina.

• On March 14, Vale exercised the preemptive right provided for in the incorporation agreement of Consórcio Capim Branco, acquiring a 12.47% interest of Suzano Papel e Celulose S.A for R$ 223,030,470.52 in the capital of hydroelectric plants Capim Branco I & II. Consequently, Vale holds 60.89% on Capim Branco I & II, capable of generating 1,524 gigawatts hour per year of power by the end of the concession in 2036.

• On April 29, Vale received the environmental operation license (LO) for railroad terminal Ponta da Madeira (PDM), in the State of Maranhão, issued by the State Secretary of Environment and Natural Resources of Maranhão. The PDM railroad terminal is part of the North Logistic Capacity project (CLN 150), which allows expansion of Carajás capacity to 150 million annual metric tons.

• On May 6, Vale received the environmental installation license (LI) and authorization to remove vegetation for the railroad branch to connect Serra Sul de Carajás to EFC, in the State of Pará, issued by the Brazilian Institute of Environment and Renewable

Table of Contents

Natural Resources (IBAMA), which allows beginning the construction of the 101 km railroad branch to connect the storage yard of S11D to EFC. The railroad branch is part of the logistic capacity S11D project, which allows expansion of Carajás logistic capacity to 230 million annual metric tons of iron ore.

• On June 28, 2013, Vale and members of Consortium SF-T-80 received authorization by the National Agency of Petroleum ANP to return the blocks in the São Francisco Basin (SF-T-80, 82, 83 and 93).

• In July 2013, Vale concluded the contract of a revolving credit facility in the amount of US$ 2 billion for 5 years.

• On September 18, Vale entered into agreements to sell 20% of the total capital of VLI S.A. (VLI) to Mitsui & Co. Ltd. (Mitsui) for R$ 1.5 billion and 15.9% of the capital of VLI for R$ 1.2 billion to the Investment Fund of the Severance Fund FGTS (FI-FGTS), which is managed by Caixa Econômica Federal.

• On November 7, 2013, Vale entered into an agreement with GDF, under which it granted to GDF (Gaz de France) its share in the blocks of Parnaíba Basin (BT-PN-2 and BT-PN3), for approximately R$24 million.

• On November 14, Vale announced the sale of all its 22% interest in Hydro for NOK 25.00 per share, summing NOK 11.196 billion, equivalent to US$ 1.822 billion (equivalent to R$ 4.218 billion). Vale Austria has held these shares since 2011, when the company restructured the aluminum asset portfolio. After conclusion of this transaction, Vale Austria no longer holds equity in Hydro.

• On November 27, Vale announces adherence to the federal tax refinancing agreement (REFIS) related to the payment of income tax and social contribution on net profit of affiliates abroad on profit generated abroad in the period between 2003 and 2012, according to terms set forth by Law 12.865/2013 and Provisional Order no. 627/ 2013. Adherence to REFIS implied the payment to the Federal Revenue Secretariat of R$ 5.965 billion by the end of November and R$ 16.360 billion in 179 months, where monthly installments are adjusted according to the SELIC interest rate.

• On December 12, Vale concluded the sale of Sociedad Contractual Minera Tres Valles, cathode copper production company in the area of Coquimbo in Chile, for US$ 25 million (equivalent to R$ 54 million) to Inversiones Porto San Giorgio S.A (ISG), company controlled by the Chilean group Vecchiola S.A.

• On December 19, Vale entered into agreements with CEMIG Geração e Transmissão S.A. (CEMIG GT) to create two joint ventures: (i) Aliança Geração de Energia S.A., comprised by assets and power generation projects of both companies; and (ii) Aliança Norte Energia Participações S.A., comprised by the sale to CEMIG GT of 49% of the shares held by Vale in its 9% interest in NESA, company responsible for building, operating and exploring the hydroelectric plant of Belo Monte for approximately R$ 310 million.

• On December 20, Vale signed an agreement with Israel Chemicals Ltd. (ICL) to sell its 44.25% interest in Fosbrasil, company producer of purified phosphoric acid, located in Cajati, State of São Paulo, for US$ 52 million.

• On December 23, Vale entered into an agreement with a fund managed by Brookfield Asset Management (Brookfield) to sell 26.5% of its interest in the capital of VLI, for R$ 2 billion.

• On December 23, Vale informed that it filed with the Superior Court of Justice (STJ) on December 19, a petition for partial dismissal in the process discussing the legality of taxation of profit from affiliates abroad. This dismissal refers to the period between 2003 and 2012. Vale informed that it will continue questioning taxation applicable to the period

between 1996 and 2002 and 2013. Should there be a winning decision, Vale will claim immediate return of values paid relative to the period between 2003 and 2012, according to installment payment under the terms in Provisional Order no. 627/2013 and as mentioned in relevant fact published on November 27, 2013, and it will suspend payments for outstanding installments.

• On December 26, Vale promoted an auction, under the terms in CVM Instruction no. 168/1991, as amended, to sell 28,737,367 common shares issued by Log-in, company listed in BM&FBOVESPA (ticker symbol: LOGN3), corresponding to all common shares issued by Log-in then held by Vale, for R$ 8.11 per share, totaling R$ 233 million. This transaction was concluded on January 2, 2014.

2014

• In January, Vale updated its Code of Ethics and Conduct for purposes of obtaining better alignment with its mission, vision, and values, reinforcing ethical standards and updating aspects of the anticorruption and antitrust laws.

• On February 18, Vale closed the offer of infrastructure debentures for R$ 1 billion and funds from this offer are to be used on investments related to the Company infrastructure projects deemed to be priority, under the terms in article 2 in law no. 12.431/2011, as amended.

• In May, BNDES approved the funding agreement for R$ 6.2 billion for the deployment of the Carajás Serra Sul S11D and the logistic capacity project S11D projects. The funding term is for ten years and funds will be disbursed in up to three years, according to the project schedule.

• On April 14, the transaction announced on September 18, 2013 was concluded, with the transfer of 20% of the capital stock of VLI to Mitsui by R$ 1.5 billion and 15.9% to Fundo de Investimento do Fundo de Garantia do Tempo de Serviço FGTS (FI-FGTS), which assets are managed by Caixa Econômica Federal, for R$ 1.2 billion.

• In April, the Republic of Guinea revoked the mining rights for the Simandou and Zogota concession areas held by VBG.

• On June 4, Vale announced entering an agreement with a subsidiary of Suzano Papel e Celulose (Suzano Subsidiary), company that produces eucalyptus cellulose, to sell its entire share in Vale Florestar Fundo de Investimento em Participações, a reforesting investment fund, for R$ 205 million. All usual precedent conditions and approvals, including those granted by the Economic

Table of Contents

Defense Administrative Board (CADE) were met, and, thus, the transaction executed on August 8, 2014. Simultaneously, BNDESPar, Petros and FUNCEF, other shareholders of the Investment Fund Vale Florestar, also sold their shares to Suzano Subsidiary and, with the conclusion of the transaction, the Investment Fund Vale Florestar was held, solely, by Suzano Subsidiary.

• On August 19, the transaction announced on December 23, 2013 was concluded, with the transfer of 26.5% of the capital of VLI to Brookfield for R$ 2 billion. As result of this transaction, Vale holds 37.6% of the capital of VLI.

• On August 20, Vale informed the granting of the prior environmental license for the Global EIA, issued by IBAMA. The licensing of the Global EIA comprises the expansion of N4WS, N5S, Morro I and Morro II, containing 1.8 billion tons of reserves and permission to pile sterile in the North System in Carajás, Brazil. Additionally, on November 5, Vale obtained the operation license to expand N4WS.

• On September 12, Vale International SA and China Ocean Shipping Company (Cosco) entered a strategic cooperation agreement in maritime transportation of iron ore. Under the terms of this agreement, four VLOCs, with 400 thousand tons, currently owned and operated by Vale, will be transferred to Cosco.

• On September 26, Vale International S.A. and China Merchants Group entered an agreement contemplating the strategic cooperation in maritime transportation of iron ore. Under the terms of this agreement, the companies agreed upon entering a freight agreement for 25 years to carry Vale Brasil s iron ore to China using 10 VLOCs to be built by the China Merchants Group.

• On October 17, Vale announced that PTVI entered into an amendment to the contract of work with the government of Indonesia, and the agreement will now terminate in 2025, with the option to extend operations until 2045 for two 10-year consecutive periods, subject to approval by the local government, if PTVI complies with the requirements in the amendment.

• On November 9, 2014, Vale Austria sold to Hydro shares issued by Mineração Paragominas S.A. representing 20% of its capital, as exercise of a *put option*. The remaining 20% interest held by Vale Austria in the capital stock of Mineração Paragominas S.A. is also subject to a Vale *put option*, which can be exercised starting on February 28, 2016.

• On December 9, Vale announced entering into an investment agreement with Mitsui, under which Mitsui will, subject to compliance with precedent conditions, hold 15% of Vale s 95% interest in Vale Moçambique (concessionaire of 95% of the Moatize mine) and 50% of Vale s interest in the Nacala Logistic Corridor. The conclusion of the transaction is subject to some precedent conditions and is predicted to take place in 2016.

• On December 18, upon compliance with precedent conditions and approval by CADE, the sale of Vale s entire share corresponding to 44.25% of the capital of Fosbrasil, company that produces purified phosphoric acid, located in Cajati, State of São Paulo, was concluded for US$ 52 million.

• On December 23, Vale incorporated its wholly-owned subsidiaries Sociedade de Mineração Constelação de Apolo S.A. and Vale Mina do Azul S.A.

2015

• On February 27, 2015, Vale concluded the transaction that started in December 2013 with CEMIG GT to establish the joint venture Aliança Geração de Energia S.A., by transferring its shares in some projects (Central Eólica Garrote Ltda., Central Eólica São Raimundo Ltda., Central Eólica Santo Inácio III Ltda., and Central Eólica Santo Inácio IV Ltda.) and operation assets (Consórcio da Usina Hidrelétrica de Igarapava, Consórcio AHE Porto Estrela, Consórcio AHE Funil, Consórcio UHE Candonga, Consórcio da Usina Hidrelétrica de Aimorés, and Consórcio Capim Branco Energia to Aliança Geração.)

• On March 2, 2015, the amendment to the agreement entered with Silver Wheaton (Caymans) Ltd. On February 28, 2013, was entered, for purposes of determining that the agreement also encompasses the purchase of an additional flow of 25% of payable gold produced as byproduct of the copper mining at the Salobo mine, during the mine s use life.

• On March 13, 2015, Vale transferred its share in VBG back to BSG Resources Limited, due to the revocation by the Government of Guinea of the mining rights held by the joint venture in April 2014.

• On March 31, 2015, Vale concluded the transaction that started in December 2013 with CEMIG GT for the sale of 49% of Vale s share on 9% of the project of the hydroelectric plant Belo Monte, for approximately R$ 310 million.

• On April 27, 2015, Companhia Siderúrgica do Pecém CSP (CSP) concluded a long term financing agreement worth close to US$ 3 billion that will contribute to the fulfillment of the main future financing needs of the project. This loan is to be taken directly from CSP.

• On May 15, 2015, Vale concluded the contract of a revolving credit facility in the amount of US$ 3 billion, for five years. Vale also has another line in the amount of US$ 2 billion, thus totaling 5 billion in revolving credit lines.

• On May 19, 2015, Vale International SA and China Merchants Energy Shipping Co., Ltd. (CMES), a subsidiary of China Merchants Group, executed an amendment to the agreement that contemplates the long-term strategic cooperation between both companies for maritime transportation of iron ore. The first agreement was entered with China Merchants Group on September 26, 2014. Under the terms in this amendment, Vale would sell 4 VLOCs (very large ore carriers) to CMES.

• On May 19, 2015, Vale concluded a transaction that was disclosed on September 12, 2014, with the sale of four VLOCs ships, with a capacity of 400 thousand ton, to Cosco. The transaction totaled US$ 445 million.

• On May 29, 2015, Vale obtained vegetal suppression and operation licenses to explore area N5S.

• On May 29, 2015, Vale initiated operations in Conceição Itabiritos II and it will initiate operations in Cauê Itabiritos in the second half of 2015.

Table of Contents

• On July 30, 2015, Vale and *Fundo de Investimento em Participações Multisetorial Plus II* (FIP Plus II), whose quotas are held by Banco Bradesco BBI S.A., entered into a Purchase and Sale Contract of Stocks and other assignments, through which Vale promised to sell class A preferential stocks, representative of 36.4% of the share capital of *Minerações Brasileiras Reunidas S.A.* MBR (MBR), for R$ 4 billion, subject to usually applicable suspensive conditions, including CADE s advance approval of the operation.

• On July 20, 2015, Vale concluded the sale of four VLOC ships, with a capacity of 400 thousand tons, to CMES. The transaction is related to the agreements signed with CMES on September 26, 2014 and May 19, 2015, which had already been disclosed. The total amount of the transaction was US$ 448 million. The sum was paid to Vale when the ships were delivered to CMES on September 25, 2015.

• On September 1, 2015, Vale and FIP Plus II concluded the sale of 36.4% of MBR s share capital by fulfilling the required precedent conditions for the sale of the operation. The transaction is related to the July 30, 2015 disclosure and the amount that Vale received from the sale of class A preferred shares was R$ 4 billion or US$ 1.080 billion. After the sale, Vale holds 61.9% of the total share and 98.3% of the shares with voting rights. Vale has the option to repurchase the shares issued by MBR that are currently held by BBI, FIP Plus II s successor.

• On September 18, 2015, Vale concluded the offer of infrastructure debentures.

• In November 2015, Vale concluded the sale of its 50% share in the Isaac Plains joint venture and all assets related to Stanmore Coal Limited (Stanmore). Pursuant to the terms of this contract, Vale shall pay A$ 21.6 million in 12 monthly payments to Stanmore, which shall take on Vale s responsibilities in the joint venture contract. Stanmore agreed to pay royalties to Vale in the amount of A$ 2.0 per ton of coal produced and sold in the Isaac Plains coal mine for 10 years, subject to certain minimum price limits, up to an added value of A$ 21.6 million.

• On November 5, 2015, one of the iron ore tailings dam belonging to Samarco (Fundão) located in the Complexo Minerário de Germano, in Mariana, in the State of Minas Gerais, collapsed and caused social and environmental impact. As a consequence to the collapse of the dam, Samarco operations in Germano/Alegria (Complexo Mariana) were temporarily suspended by order of government agencies. For further information about the dam s collapse and its impact see items 4. 7.9, 10.1 of this Reference Form.

• In December 2015, Vale concluded the sale of 68.4% of its shares in the Joint Venture de Carvão da Integra (ICJV) and all of its assets related to Glencore Plc (Glencore). As compensation, Glencore agreed to pay Vale royalties in the amount of A$ 1.50 per ton of coal produced and sold by ICJV, based on the mineral rights currently held by ICJV, proportional to Vale s shares in ICJB before the sale and limited to an annual volume of two million metric tons for ten years. As part of the transaction, Glencore took over some, but not all, of ICJV s obligations including certain mandatory purchase logistic contracts.

• On December 8, 2015, Vale concluded the transaction for the purchase and sale of four VLOC ships with a capacity of 400,000 tons to the consortium led by ICBC Financial Leasing, a subsidiary fully controlled by the Industrial and Commercial Bank of China. The transaction totaled US$ 423 million and the amount was received by Vale when the ships were delivered to their new owners.

• On January 12, 2016, Vale disbursed US$ 3 billion from the US$ 5 billion available from its revolving credit lines to increase liquidity and cover potential cash flow needs until the conclusion of its divestments program, in particular the conclusion of the transaction of coal involving Moatize and the Nacala Logistics Corridor.

• On February 16, 2016, Vale changed the address of its social headquarters to Avenida das Américas, nº 700, Bloco 8 Loja 318, 3º andar, Barra da Tijuca, Rio de Janeiro, RJ.

• On February 26, 2016, the credit rating agency Moody s downgraded Vale s Investment Degree .

• On March 7, 2016, Vale signed a non-binding MOU with the Australian Fortescue Metals Group Ltd. (Fortescue), that established the principles under which Vale and Fortescue agree to seek long term opportunities to develop new business, including the establishment of one or more joint ventures for the blending and distribution of Vales and Fortescue products and the possibility that Vale, optionally, may develop mining projects with Fortescue in Australia and acquire minority share in Fortescue s controlling company.

• On April 4, 2016, Vale announced the sale of its total share of 26.87% in Companhia Siderúrgica do Atlântico (CSA) to Thyssenkrupp as part of its initiative to simplify its portfolio of assets. The conclusion of the agreement is pending on the fulfillment of precedent conditions and approvals, including CADE approval. For additional information, see item 15.7 of this Reference Form.

•On April 28, 2016, Vale announced that its Board of Directors had approved the proposal to end the program that lists HDRs in the Hong Kong Stock Market (HKEx). The end of the program is subject to HKEx approval and it is expected to become effective in 2016.

• On May 10, 2016, Vale announced the end of the negotiations held with Hydro regarding the potential sale of its 40% share in MRN. Vale and Hydro have prepared a letter of intentions in October 2015 related to a possible transaction, but there was no agreement on the commercial terms.

Vale clarifies that there were no sector political or macroeconomic decisions that could have affected significantly the Company in the year ending on December 31, 2015 and by the annual filing date of this Reference Form.

Table of Contents

6.5 Information on bankruptcy filing based on relevant values, or judicial or extrajudicial recovery

Not applicable. There are no bankruptcy filings based on relevant values, or judicial or extrajudicial recovery of the Company.

6.6 Other relevant information

Sale of part of the gold flow produced as byproduct

On February 28, 2013, Vale Switzerland, after approval by the Board of Directors, concluded the contract with Silver Wheaton Corp. (SLW), a Canadian company with share traded in the Toronto Stock Exchange and in the New York Stock Exchange, for the sale of 70% of payable gold flow produced as a byproduct in certain nickel mines in Sudbury, for a period of 20 years, and with Silver Wheaton (Caymans) Ltd. for the sale of 25% of the payable gold flow produced as byproduct in the Salobo copper mine, for the extent of the mine s longevity. In terms of the Sudbury operation, in addition to the initial payment of US$ 1.9 billion in cash, Vale Switzerland received 10 million in SLW warrants with a strike price of US$ 65 and a 10-year term. Additionally, Vale will receive cash payments for each ounce (oz.) of gold delivered to SLW as per the agreement, at the lowest amount between US$ 400 per ounce (plus a 1% annual adjustments starting in 2017 in the case of Salobo) and the market price.

This transaction frees a considerable amount contained in Vale s world class basic metals assets, to the extent that it attributes to the payable gold produced in Salobo de amount of US$ 5.32 billion, in addition to the payments of US$ 400 per ounce delivered, given that there will be no additional cost to extract the gold contained in the condensed copper produced at Salobo. The execution of Vale strategic plan reinforces the Company s confidence in the high potential of its world-class basic metals and the belief that they will general significant value to shareholders across the cycles.

Additionally, Vale may also receive an additional payment in cash depending on the decision to expand the copper ore processing capacity in Salobo to 28 Mtpa more before 2036, provided that such additional payment may vary between US$ 88 million and US$ 720 million, depending on the time and size of the expansion).

On March 2, 2015, the contract signed with Silver Wheaton (Caymans) Ltd. on February 28, 2013 was amended for the purpose of including the purchase of an additional flow of 25% of payable gold produced as a byproduct of copper mining in the Salobo mine, for the longevity of the mine s useful life. Vale received for this transaction an initial payment of US$ 900 million and it shall receive future cash payments for each ounce (oz) of gold delivered to Silver Wheaton based on the lowest value between US$ 400 per ounce and the market price. This amount shall be updated annually at 1% starting in 2017.

Alemão Project Royalties

On June 19, 2015, Vales entered into a contract with BNDES to regulate the participation of BNDES economic rights in the event of Vale s developments in the Alemão Project, foreseen in the Postponement of Future Share Participation Account Agreement signed on March 5, 1985, when Vale paid to BNDES royalties corresponding to ¼ (one third) of the economic rights from the Alemão Project, which was determined through a market based economic model.

Vale shall pay royalties annually when concentrated copper sales from the Alemão Project begin. The royalty corresponds to 2.5% of the Alemão Project s annual net revenue, but in the years when the annual average of copper prices, as published by the LME, reaches US$ 8,000.00/ton (Trigger Price), the royalty relative to these specific years shall be raised to an additional 2.25%. The Trigger Price shall be adjusted annually by the Consumer Price Index (CPI).

Table of Contents

7.1 Description of main activities engaged by the issuer and its subsidiaries

Vale is one of the largest mining companies in the world by market value. Vale is the largest iron ore and iron ore pellets producer and the largest nickel producer in the world. Vale also produces manganese ore, ferroalloys, copper, thermal and metallurgical coal, phosphates, potash, cobalt, and platinum group metals (PGMs), gold and silver and other fertilizers. Vale is engaged in mineral exploration in 6 countries in the world. Vale operates large logistics systems in Brazil and in other areas of the world integrated with its mining operations, including railroads, maritime terminals and ports. In addition, Vale has a portfolio of maritime freight, floating transfer stations and distribution centers to support distribution of iron ore worldwide. Vale also has investments in the sectors of energy and steel, directly or through subsidiaries and joint ventures.

The corporate purpose of the Company is (i) realize the enjoinment of mineral reservoirs in national territory and abroad though research, exploration, extraction, processing, industrialization, transportation, shipment, and sale of minerals; (ii) build railroads, operate and explore railroad traffic of its own and of third parties, (iii) build and operate maritime terminals, owned or third parties , as well as explore navigation and port support activities; (iv) provide load transportation integrated logistics services, including receipt, storage, transportation, distribution and delivery within the context of a multimode transportation system; (v) produce, process, carry, industrialize and sell each and every source and form of power, being entitled to act in the production, generation, transmission, distribution, and sale of its products, byproducts and sub products; and (vi) engage, in Brazil and abroad, in other activities that may be directly or indirectly of in the interest of the company to perform its corporate purpose, including research, industrialization, sale and purchase, importing and exporting, as well as exploration, industrialization and sale of forest resources and provision of services of any nature; and (vii) incorporate or participate, under any model, of other companies, consortiums, entities which corporate purpose is directly or indirectly linked, assisting or instrumental to its corporate purpose.

For information about the Company, see item 6.3 in this Reference Form.

For information about activities developed by the Company and its subsidiaries in its markets, see items 7.2 and 7.3 below.

Table of Contents

7.2 Information on operational segments

a. Products and services marketed in each operating segment

(i) Ferrous Materials Includes extraction of iron ore and production of pellets, as well as the North, Southern and Southeastern transportation systems, including railroads, ports, maritime terminals, and ships linked to these operations. Exploration of manganese ore and the production of ferroalloys are also included in this segment.

Iron ore and iron ore pellets. Vale operates four systems in Brazil for production and distribution of iron ore, which are known as Northern, Southeastern, Southern, and Center-Western systems. The North and Southeastern systems are fully integrated and are composed of mines, railroads, maritime terminals and a port. The Southern system is composed of three mining complexes and two maritime terminals. Vale also has iron ore pellets operations in different locations, some of them under joint ventures. Vale operates 11 pelleting plants in Brazil and two in Oman. Operations of three of its pelleting plants in Brazil have been suspended since the fourth quarter of 2012, in response to market conditions, and its capacity has been partially replaced by Tubarão VIII, a more effective plant. In addition, Vale holds a 50% share in Samarco, joint venture that operates an integrated system in the states of Minas Gerais and Espírito Santo, in Brazil. Samarco operations have been suspended following the breakage of the Fundão waste barrage in November 2015. Vale also holds a 25% interest in two pelleting companies in China. For information related to the breakage of the Samarco barrage, see items 4, 7.9, and 10.1 in this Reference Form.

Infrastructure logistics: Vale is a leading operator in logistic services in Brazil and in other areas of the world, with railroads, maritime terminals, distribution centers, and ports. Two of four iron ore systems of Vale include a railroad integrated with a port and maritime terminals. Vale also holds interest in MRS Logística S.A. (MRS), company that carries Vale s iron ore products from the mines in the Southern System to its maritime terminals, and in VLI S.A. (VLI), company that offers integrated logistics solutions for general cargo using railroads and land and maritime terminals in Brazil. The logistic infrastructure to support Vale operations in the Southeast of Africa are currently in ramp up. Vale owns and charters vessels to carry bulk products, sold to clients on a cost and freight (CFR) basis.

Manganese ore and ferroalloys. Vale conducts its manganese mining operations through the its holding (Vale S.A.) and subsidiaries in Brazil, and produces several manganese ferroalloys through a wholly-owned subsidiary in Brazil.

(ii) Coal extraction of coal and related logistic services. Vale conducts its coal operations primarily in Mozambique through Vale Moçambique S.A., where metallurgic and thermal coal operations are in ramp up. Vale also maintains coal operations in Australia through Rio Doce Austrália Pty Ltd. (Vale Australia), where the Company produces metallurgic coal in Carborough Downs. Vale also holds minor interests in a Chinese coal and coking producer.

(iii) Base metals Includes the production of non-ferrous minerals, including production of nickel (co-products and by-products), copper and investments in aluminum partnerships.

Nickel. Nickel mines and processing operations are conducted by Vale s wholly-owned subsidiary, Vale Canada Limited (Vale Canada), with operations in Canada and in Indonesia. Vale also maintains nickel operations in Onça Puma, in the state of Pará,

Table of Contents

in Brazil. The company also owns and operates, or holds interests in nickel refineries in the United Kingdom, Japan, Taiwan, China and South Korea. Vale is currently in ramp up of its nickel operations in New Caledonia;

Copper. In Brazil, Vale produces copper concentrate in Sossego and Salobo, in Carajás, in the state of Pará. Vale is concluding the ramp up of operations in Salobo. In Canada, Vale produces copper concentrates, copper anodes, and copper cathodes associated to its nickel mining operations in Sudbury and Voisey s Bay. In Zambia, Vale s joint venture produces copper concentrates in Lubambe, in the copper belt in Zambia.

Cobalt, PGMs and other precious metals. Vale produces cobalt as a sub product of its nickel mining and processing activities in Canada and refines most part of it at its facilities in Port Colborne, in the Ontario Province, Canada. Vale also produces cobalt as a sub product of its nickel operations in New Caledonia, which are currently in ramp up. Vale produces platinum group metals (PGMs) as sub product of its nickel operations and processing in Canada. PGMs are concentrated at the Port Colborne facilities and are refined in its precious metal refinery in Acton, England. Vale produces gold and silver as sub products of its nickel mining and processing operations in Canada, and gold is also a sub product of copper mining in Brazil.

(iv) Fertilizers Includes three important nutrient groups: potassium, phosphates and nitrogen. Vale conducts its potash operations in Rosário do Catete, in the state of Sergipe, Brazil. Main Vale s phosphate operations are conducted by its subsidiary Vale Fertilizantes S.A., which holds most of the fertilizing assets of Vale in Brazil. Vale Fertilizantes is the largest Brazilian producers of fertilizers from phosphate rocks and phosphates and the second largest Brazilian producer of nitrogen-based fertilizers. Vale also maintains operations at the phosphate rock mine in Peru.

(iv) Others Includes investments in joint ventures and affiliates in other businesses.

The information presented to upper management regarding performance of each segment are usually originated from accounting records maintained according to generally accepted accounting principles in Brazil, with some minimum relocations between segments.

Table of Contents

b. Revenue from the segment and its participation in the Company s net revenues

In R$ thousands	2015		2014		2013	
Segment	**Net Revenue**	**% of total**	**Net Revenue**	**% of total**	**Net Revenue**	**% of total**
Ferrous Materials	55,413,000.00	64.81	60,395,000.00	68.42	75,668,000.00	74.56
Coal	1,739,000.00	2.03	1,740,000.00	1.97	2,188,000.00	2.16
Base Metals	20,491,000.00	23.97	18,137,000.00	20.55	15,746,000.00	15.51
Fertilizers	7,442,000.00	8.70	5,656,000.00	6.41	6,038,000.00	5.95
Others	414,000.00	0.48	2,347,000.00	2.66	1,850,000.00	1.82
Total Revenue	85,499,000.00	100	88,275,000.00	100.00	101,490,000.00	100.00

c. Profit or loss resulting from the segment and its participation in the Company s net income

In R$ thousands	2015		2014		2013	
Segment	**Profit/Loss**	**% of total**	**Profit/Loss**	**% of total**	**Profit/Loss**	**% of total**
Ferrous Materials	(8,533,000.00)	19.30	1,109,000.00	116.25	7,588,000.00	6,593.04
Coal	(16,097,000.00)	36.41	(1,866,000.00)	(195.60)	(528,000.00)	(458.77)
Base Metals	(17,553,000.00)	39.70	4,793,000.00	502.41	(781,000.00)	(678.59)
Fertilizers	(707,000.00)	1.60	(2,206,000.00)	(231.24)	(6,088,000.00)	(5,289.73)
Others	(1,323,000.00)	2.99	(876,000.00)	(91.82)	(72,000.00)	(62.56)
Discontinued operations						
General load					(3,909.00)	(3.40)
Net Profit of the Period	(44,213,000.00)	100.00	954,000.00	100.00	115,091.00	100.00

Table of Contents

7.3 Information on products and services related to the operating segments

a. Characteristics of the production process

b. Characteristics of the distribution process

c. Characteristics of the markets, in particular:

i. competition conditions in the markets

ii. participation in each market

d. Possible seasonality

e. Main input and raw material, including:

i. description of relations with suppliers, including if they are subject to control or regulation, indicating entities and applicable respective laws

ii. eventual dependent on small number of suppliers

iii. eventual price volatility

Ferrous materials

Vale s ferrous materials business includes iron ore prospecting, pellet production, manganese ore prospecting, and ferroalloy production. Each activity is described below.

Iron Ore and Iron Ore Pellets

1.1.1 Iron ore operations

Vale runs the majority of its iron ore operations in Brazil mainly through (a) Vale S.A., parent company, and (b) its wholly-owned subsidiary Mineração Corumbaiense Reunida S.A. (MCR) and (c) Vale s affiliate, Minerações Brasileiras Reunidas S.A. (MBR). Vale s mines, which are all open-pit and their operations are concentrated essentially in three systems: the Southeastern System, the Southern System and the Northern System, each with its own transportation capacity. Vale also has mining operations in the Central Western System and holds 50% interest in Samarco. Samarco operations have been suspended following the breakage of one of its waste Fundão barrages in the State of Minas Gerais in November 2015. All the iron ore operations of Vale in Brazil are held under concession by the federal government, which are granted for undetermined period.

Table of Contents

Company/ Mining System	Location	Description / History	Mining	Operations	Power source	Access / Transportation
Vale Northern System	Carajás, in the State of Pará	Open-pit mines and ore processing plants. Divided into North Range, South Range, and East Range. Since 1985, Vale has been conducting mining activities in the Serra Norte, which is divided into three main mining bodies (N4W, N4E and N5) and two key processing plants. In 2014, Vale started a new mine and a new processing unit in Serra Leste. Vale expects its operations in Serra Sul, location of its S11D projects, to start in 2016.	High-grade hematite ore (iron content over 66% on average).	One-pit mining operations. The processing consists simply of sizing operations, including screening, hydrocycloning, crushing and filtration. The processing produces sinter feed, pellet feed, and granulated ore.	Power provided by the national power network, produced directly by Vale or acquired under power purchase contracts.	The iron ore is transported by the Carajás Railroad (EFC) to the Ponta da Madeira maritime terminal in the State of Maranhão. Iron ore from Serra Leste is carried by trucks from the mine to the EFC railroad.
Southeastern System	Iron Quadrangle region of the State of Minas Gerais	Three mining complexes: Itabira (two mines, with three important processing plants), Minas Centrais (three mines, with three	The ore reserves have high ratios of itabirite ore relative to hematite ore. Itabirite ore has iron grade between 35% and 60% and requires concentration to	Open-pit mining operations. Vale generally processes the run-of-mine (ROM) by means of standard crushing, followed by	Power provided by the national power network, produced directly by Vale or acquired under	The Vitória a Minas Railroad (EFVM) connects these mines to the Tubarão port.

Table of Contents

Company/ Mining System	Location	Description / History	Mining	Operations	Power source	Access / Transportation
		important processing plants and one secondary plant) and Mariana (three mines and two processing plants).	achieve shipping grade.	classification and concentration steps, producing sinter feed, lump ore and pellet feed in the processing plants located at the mining complexes.	power purchase contracts	
Southern System	Iron Quadrangle region of the State of Minas Gerais	Three mining complexes: Minas Itabirito (four mines, and three major processing plants); Vargem Grande (three mines and two major processing plants); and Paraopeba (four mines and two processing plants). Part of these operations is conducted by	The ore reserves have high ratios of itabirite ore relative to hematite ore. Itabirite ore has iron grade between 35% and 60% and requires concentration to achieve shipping grade.	Open-pit mining operations. Vale generally processes the run-of-mine (ROM) by means of standard crushing, followed by classification and concentration steps, producing sinter feed, lump ore and pellet feed in the processing plants located	Power provided by the national power network, produced directly by Vale or acquired under power purchase contracts,	MRS transports Vale s core products from the mines to Guaíba Island and Itaguaí maritime terminals in the Brazilian State of Rio de Janeiro. EFVM railroad connects certain mines to the port of Tubarão.

Table of Contents

Company/ Mining System	Location	Description / History	Mining	Operations	Power source	Access / Transportation
		Vale s subsidiary MBR.		at the mining complexes.		
Central western System (1)	State of Mato Grosso do Sul	Open-pit mining operations. Two mines and two plants located in the city of Corumbá.	Hematite ore that mainly generates granulated ore.	Open-pit mining operations. The mine operates through standard crushing, followed by classification, producing granulated and fine.	Power provided by the national power network, acquired from regional utilities.	Part of the sales is carried in barges through the Paraguay River to ports in Argentina, then going to the European and Asian markets. Another portion of the sales is carried to clients at the ports of Corumbá.
Samarco	Iron Quadrangle region of the State of Minas Gerais	Integrated system comprised of two mines, three processing plants, three pipelines, four pellet plants and a port.	Itabiriteore	Open-pit mining operations. Three processing plants located in the facility process ROM by means of standard crushing, classification and concentration steps, producing sinter feed, lump ore and pellet feed. Samarco operations	Power provided by the national power network, acquired from regional utilities or produced by Samarco.	Samarco mines serve Samarco processing plants by three pipelines of approximately 400 km. These pipelines transport the iron ore from the processing plants to the pelleting plants and from the pelleting plants to the port, in the State of Espírito Santo.

Table of Contents

Company/ Mining System	Location	Description / History	Mining	Operations	Power source	Access / Transportation
				have been suspended following the breakage of one of its waste Fundão barrages in the State of Minas Gerais in November 2015		

(1) Part of Vale s operations in the Central Western System is conducted by MCR.

1.2 Iron Ore Production

The following table sets forth information about Vale s iron ore production.

Table of Contents

Mine/Plant	Type	Production for fiscal year ended on December 31 2013	2014	2015	Recovery Process Rate in 2015 (%)
			(million metric tons)		
Southeastern System					
Itabira	Open pit	34.0	35.5	35.5	55.2
Minas Centrais	Open pit	37.8	33.0	41.2	67.7
Mariana	Open pit	37.6	38.9	35.9	81.8
Total Southeastern System		109.4	107.4	112.6	
Southern System Minas Itabirito		31.0	33.0	31.6	72.3
Vargem Grande	Open pit	22.0	25.0	29.3	70.7
Paraopeba	Open pit	26.0	28.2	25.8	95.1
Total Southern System		79.0	86.2	86.7	
Central western System					
Corumbá	Open pit	4.5	3.8	2.8	64.1
Urucum	Open pit	2.0	2.1	1.7	82.6
Total Central Western System		6.5	5.8	4.5	
Northern System					
Serra Norte	Open pit	104.9	117.4	127.6	98.2
Serra Leste	Open pit		2.2	2.0	98.7
Total Northern System		104,9	119.6	129.6	
Total of Vale (2)		299.8	319.0	333.4	
Samarco (3)	Open pit	10.9	13.1	12.7	53.6
Total		310.7	332.1	346.1	

The Água Limpa mine and plants are part of the Minas Centrais operations and are owned by Baovale Mineração S.A. (Baovale). Vale owns 100% of the voting shares and 50% of the total shares of Baovale. Production figures for Água Limpa were not adjusted to reflect Vale s ownership interest.

Production figures do not include the purchase of ore by third parties equal to 12.5 Mt in 2015, 12.3 Mt in 2014, and 10.6 Mt in 2013

Table of Contents

Production figures for Samarco, in which Vale has a 50% interest, have been adjusted to reflect Vale s ownership interest.

1.1.3. Iron Ore Pellet Operations

Vale produces iron ore pellets in Brazil and in Oman, directly and by means of joint ventures, as shown in the table below. Vale also holds 25% in two iron ore pelleting plants in China, Zhuhai YPM Pellet Co., Ltd. (Zhuhai YPM) and Anyang Yu Vale Yongtong Pellet Co., Ltd. (Anyang). Vale s estimated total capacity is 64.7 million tons per year (Mtpa), including the full capacity of its Oman pelleting plants, but without its joint ventures Samarco, Zhuhai YPM and Anyang. Of the total 2015 pellet production, including the production from joint ventures, 68.6% corresponded to blast furnace pellets, and 31.4% corresponded to direct reduction pellets, which are used in steel mills that employ the direct reduction process rather than blast furnace technology. The Company meets all the iron ore needs of its pelletizing plants and part of the iron ore needs for Samarco and Zhuhai YPM. In 2015, Vale sold 9.8 million metric tons of the mine production to Samarco and 0.9 million metric tons of the pellet production to Zhuhai YPM. Vale suspended its gross ore sales to Samarco due to the suspension of Samarco mining operations caused by the breakage of the Samarco s waste Fundão barrage in November 2015.

Company / Plant	Description / History	Nominal capacity (Mtpa)	Power source	Other information	Our participation (%)	Partners
Brazil:						
Vale						
Tubarão (State of Espírito Santo)	Our Three wholly-owned pelleting units (Tubarão I, II, and VIII) and leasing of five plants. The iron ore is received from Vale s mines in the Southeastern System and distribution is done by Vale s logistics infrastructure. The Tubarão VIII plant started operations in the first half ion 2014	36.7 (1)	Power provided by the national power network, produced directly by Vale or acquired under power purchase contracts	Pelleting operations held in Tubarão I and II were suspended on November 13, 2012, due to changes in the demand of the steel industry for raw material, and they were replaced by operations at the Tubarão VIII plant, a new and more effective plant	100.0	

Table of Contents

Company / Plant	Description / History	Nominal capacity (Mtpa)	Power source	Other information	Our participation (%)	Partners
Fábrica (State of Minas Gerais)	Part of the Southern System. Receives iron ore from the João Pereira and Segredo mines. Most part of the production is transported through MRS and EFVM.	4.5	Power provided by the national power network, produced directly by Vale or acquired under power purchase contracts.		100.0	
Vargem Grande (State of Minas Gerais)	Part of the Southern System. Receives iron ore from the Sapecado, Galinheiro, Capitão do Mato and Tamanduá mines, and most of the production is transported through MRS.	7.0	Power provided by the national power network, produced directly by Vale or acquired under power purchase contracts		100.0	
São Luís (State of Maranhão)	Part of the Northern System. Receives iron ore from Carajás mines and production is delivered to customers through Vale s Ponta da Madeira maritime terminal.	7.5	Power provided by the national power network, produced directly by Vale.	On October 8, 2012, Vale suspended operations at the pelleting plant in São Luís, for reasons similar to the ones that led to the suspension of operations at the Tubarão I and II plants.	100.0	

Table of Contents

Company / Plant	Description / History	Nominal capacity (Mtpa)	Power source	Other information	Our participation (%)	Partners
Samarco	Four pelleting units with nominal capacity of 22.3 Mtpa. Pelleting units are located at Ponta Ubu, in Anchieta, State of Espírito Santo. The fourth pelleting plant started operations in the first half of 2014.	30.5	Power provided by the national power network, acquired from regional power companies or produced directly by Samarco.	In 2014, Vale started operation of a fourth pelleting plant with capacity of 8.3 Mtpa, to increase Samarco s pelleting nominal capacity to 30.5 Mtpa. In January 2016, Samarco suspended its pelleting operations when the pellet production became unavailable due to the suspension of its mining activities in November 2015.	50.0	BHP Billiton Brasil Ltda.
Oman:						
Vale Oman Pelletizing Company LLC	Vale Industry Complex. Two pelleting plants, with total nominal capacity of 9.0 Mtpa. Pelleting plants are integrated to Vale s distribution center with nominal capacity of 40.0 Mtpa.	9.0	Power provided by the national power network.	Oman facilities are supplied with iron ore from the Quadrilátero de Ferro area, in the State of Minas Gerais, through the port of Tubarão.	70.0	Oman Oil Company S.A.O.C.

(1) Vale s environmental operating licenses for pelleting plants in Tubarão provide for a capacity of 36.2 Mtpa.

Table of Contents

1.1.4 Pellet Production

The table below provides information regarding Vale s main iron ore pellet production.

Firm	Fiscal year ending on December 31 2013	2014	2015
		(million metric tons)	
Vale(1)	39.0	43.0	46.2
Samarco (2)	10.6	12.1	12.3
Total Production	49.6	55.1	58.5

(1) The figure includes actual production, including the full production from Vale s pellet plants in Oman and four pelleting plants Vale leased in 2008, and a pelleting plant Vale has leased in Brazil in 2012. Vale signed a 10-year operating lease contract for Itabrasco s pellet plant in October 2008. Vale signed a five-year operating lease contract for Kobrasco s pellet plant in June 2008, renewed for another five years in 2013. Vale signed a 30-year operating lease contract for Nibrasco s two pellet plants in May 2008. On July 1, 2012, Vale signed a three-year operating lease contract for Hispanobrás pelleting plant, renewed for three years in 2015, and started consolidating production of this unit with Vale production.

(2) Production figures for Samarco, were adjusted to reflect Vale s ownership interest.

Clients, sales, and marketing

Vale supplies all of its iron ore and pellets (including its share in joint-venture pellet production) to the steel industry. Prevailing and expected levels of demand for steel products affect demand for iron ore and pellets. Demand for steel products is influenced by several factors, such as global industrial production, civil construction and infrastructure expenses.

In 2015, China accounted for 54% of Vale s iron ore and pellet shipments, and Asia, as a whole, accounted for 69%, while Europe, in turn, accounted for 15%, followed by Brazil with 11%. The ten largest customers of the Company collectively purchased 126 million metric tons of iron ore and pellets, representing 38% of the Company sales volumes of iron ore and pellets in 2015 and 35% of the total iron ore and pellet revenues of Vale. In 2015, no individual customer accounted for more than 10% of Vale s iron ore and pellet shipments.

In 2015, the Asian market (mainly Japan, South Korea, and Taiwan) and the European and Brazilian markets were the primary markets for Vale s blast furnace pellets, while the Middle East, North America and North Africa were the primary markets for direct reduction pellets.

Vale strongly emphasizes customer service in order to improve competitiveness. Vale works with its customers to understand their main objectives and to provide them with iron ore solutions to meet specific customer needs. Using the Company s expertise in mining, agglomeration and iron-making processes, Vale searches for technical solutions that will balance the best use of its world-class mining assets and the satisfaction of its customers. Vale believes that its ability to provide customers with a total iron ore solution and the quality of its products are very important advantages helping the Company to improve competitiveness in relation to competitors who may be more conveniently located geographically. In addition to offering technical assistance to customers, Vale operates sales support offices in St. Prex (Switzerland), Tokyo (Japan), Seoul (South Korea), Singapore, Dubai (UAE), and Shanghai (China) which support the sales made by Vale International. These offices also

Table of Contents

allow the Company to stay in closer contact with its customers, monitor their requirements and its contract performance, and ensure that the customers receive timely deliveries.

In 2015, Vale released a new iron ore fine product (Brazilian Blended Fines) to better serve market needs. Brazilian Blended Fines are a blend of fines from Carajás and the Southern System with good metallurgic performance and sintering capabilities. This product is sold from Terminal Marítimo de Teluk Rubiah in Malaysia, which, being closer to Asian clients, reduces the response time to those markets, and allows serving clients whose cargo receipt infrastructure and production scale are unable to receive large cargos, thus increasing Vale s distribution capillarity, using smaller vessels.

Vale sells iron ore and pellets under different agreements, including long-term agreements with customers and spot sales by means of auctions and business platforms. Vale s price determination is usually related to the index of prices in the spot market, like IODEX, and uses several mechanisms, including current spot prices and average prices for specific periods. When products are delivered prior to determination of the final price, Vale recognizes the sale based on a provisional price with subsequent adjustment to reflect the final price.

In 2015, Vale protected part of its total exposure to fuel prices related to (a) its own fleet and long term charter contracts (used to cover part of its carrying needs regarding CFR Cost and Freight sales) and (b) its FOB - Free on Board and domestic sales. Starting in 2016, Vale will no longer have fuel hedge transactions. Vale s fuel hedge transactions related to its own fleet and all charter contracts have been settled in 2015, but Vale still has outstanding hedge positions related to its FOB and domestic sales, which should be settled in 2016.

Competition

The global iron ore and iron ore pellet markets are highly competitive. The main factors affecting competition are price, quality and range of products offered, reliability, operating costs and shipping costs.

Vale s biggest competitors in the Asian market are located in Australia and include subsidiaries and affiliates of BHP Billiton PLC (BHP Billiton), Rio Tinto Ltd. (Rio Tinto), and Fortescue Metals Group Ltd (FMG). Vale is competitive in the Asian market for two reasons. First, steel companies generally seek to obtain the types (or blends) of iron ore and iron ore pellets that allow them to produce the intended final product in the most economical and efficient manner. Vale s iron ore has low impurity levels and other properties that generally lead to lower processing costs. For example, in addition to its high grade, the alumina grade of Vale s iron ore is very low compared to Australian ores, reducing consumption of coke and increasing productivity in blast furnaces, which is particularly important during periods of high demand. When demand is very high, the Company s quality differential usually is highlighted to customers. Second, steel companies often develop sales relationships based on a reliable supply of a specific mix of iron ore and iron ore pellets.

Operation and control of the logistic systems integrated to the Northern and Southeastern Systems help the Company to ensure that its products are delivered on time and at a relatively low cost. In addition, Vale continues developing a low-cost freight portfolio, aimed at enhancing its ability to offer products in the Asian market at CFR-based competitive prices, despite higher transportation costs, compared to Australian producers. To support this strategy, Vale built two distribution centers, one in Oman and the other in Malaysia, and two floating transfer stations (STFs) in the Philippines. Vale entered into medium and long-term freight contracts, and owns or chartered vessels, including large-size ore carriers, known as Valemax, which reduce power consumption and greenhouse gas emissions, carrying a larger amount of cargo in a single trip,

offering lower

Table of Contents

carrying costs. These investments increase the speed and flexibility for customization and reduce the market time required for its products.

Table of Contents

Vale s main competitors in the European market are: Kumba Iron Ore Limited; Luossavaara Kiirunavaara AB (LKAB); Société Nationale Industrielle et Minière (SNIM); and Iron Ore Company of Canada (IOC), subsidiary of Rio Tinto. Vale is competitive in the European market for the same reasons it is competitive in Asia, but also due to the proximity of its port facilities to European customers.

The Brazilian iron market is also competitive and includes several smaller iron ore producers and new companies that are developing projects. Anglo American is working on strengthening the Minas-Rio project. Some steel plants, as Gerdau S.A. (Gerdau), Companhia Siderurgica Nacional (CSN), Vallourec Tubos do Brasil S.A., Usiminas, and ArcelorMittal, also have iron ore operations. Although price is important, quality and reliability are important factors as well. Vale believes that its integrated transportation systems, its high quality ore and technical support make it a strong competitor in the Brazilian market.

Regarding pelleting, Vale s main competitors are LKAB, ArcelorMittal Canada (formerly Quebec Cartier Mining Co.), Iron Ore Company of Canada (IOC), and Bahrain Stell (formerly Gulf Industrial Investment Co).

1.2 Manganese ore and ferroalloys

1.2.1 Manganese ore production and operations

Vale conducts its manganese operations in Brazil through Vale S.A. and its wholly-owned subsidiaries Vale Manganês S.A. (Vale Manganês), and MCR. The Company s mines produce three types of manganese products:

metallurgical ore used primarily in the production of manganese ferroalloys, raw material to produce carbon and stainless steel;

natural manganese dioxide, suitable for the manufacturing of electrolytic batteries; and

chemical ore used in various sectors for the production of fertilizers, pesticides and animal feed, and is also used as pigment in the ceramics industry.

Mining complex	Company	Location	Description / History	Mining	Operations	Power source	Access / Transportation
Azul (1)	Vale S.A.	Pará	Open pit mining operations and local processing	High content ore (minimum manganese content of	Crushing, followed by classification, producing granulated	Power provided by the national power network,	Manganese ore is carried in trucks and by EFC to Ponta da Madeira

	plants.	40%)	and fine.	acquired from regional utility companies.

Table of Contents

							maritime terminal.
Morro da Mina	Vale Manganês	Minas Gerais	Open pit mining operations and a large processing plant. In January 2015, Vale suspended its operations due to market conditions.	Low content ore (24% content of manganese).	Crushing and screening/ average classification, producing granulated and fine for ferroalloy plants in Barbacena and Ouro Preto.	Power provided by the national power network, acquired from regional utility companies.	Manganese ore is carried in trucks to the ferroalloy plants in Barbacena and Ouro Preto.
Urucum	MCR	Mato Grosso do Sul	Underground mining operations and local processing plants.	High content ore (minimum manganese content of 40%)	Crushing, followed by classification, producing granulated and fine.	Power provided by the national power network, acquired from regional utility companies.	The manganese ore is carried to the Rosário port (Argentina) in barges through the Paraguay and Paraná rivers.

The table below presents information on Vale s manganese production.

		Production during fiscal year ending December 31			Process Recovery in
Mine	**Type**	**2013**	**2014**	**2015**	**2015**
		(million metric tons)			**(%)**
Azul	Open pit	1.9	1.7	1.7	54.0
Morro da Mina(1)	Open pit	0.1	0.1		
Urucum	Underground	0.4	0.6	0.7	83.0
Total		2.4	2.4	2.4	

(1) Vale suspended the operations of the Morro da Mina mine in 2015 due to market conditions.

Table of Contents

1.2.2 Ferroalloy production and operations

Vale conducts its manganese ferroalloy businesses through its wholly-owned subsidiary Vale Manganês.

The production of manganese ferroalloys consumes significant amounts of power, representing 2.7% of the Company total consumption in Brazil in 2015. The power supply for Vale s ferroalloy plants is provided through long-term power purchase contracts. For information on risks associated to possible power supply issues, see item 4.1 in this Reference Form.

Vale produces several types of manganese ferroalloys, such as high carbon and medium carbon manganese and ferro-silicon manganese.

Plant	Location	Description / History	Nominal capacity	Power source
Minas Gerais Plants	Cities of Barbacena and Ouro Preto	Barbacena has six furnaces, two refinery stations and a crushing plant. Ouro Preto has three furnaces.	74,000 tons are processed per year at the plant in Barbacena and 65,000 tons per year at the plant in Ouro Preto.	Power provided by the national power network. Power also acquired from independent producers under power purchase agreements.
Bahia Plants	City of Simões Filho	Four furnaces, two conversion process and one sintering plant.	150,000 tons per year	Power provided by the national power network. Power also acquired from CHESF or power purchase agreements.

The table below presents information on Vale s production of ferroalloys.

	Production during fiscal year ending December 31		
Plant	2013	2014	2015
	(thousand metric tons)		
Barbacena	45	50	6
Ouro Preto	48	8	1
Simões Filho	82	113	92
Total	175	171	99

Table of Contents

Vale has suspended operations at the Ouro Preto plant in February 2014, due to market conditions. In January 2015, the power purchase agreement, under which the Company purchases power to its plants in Barbacena and Ouro Preto terminated and the Company has suspended operations at the Barbacena plant as well. Vale is considering alternatives for power provision to these plants, considering power prices and current market conditions for manganese ferroalloys.

1.2.3 Manganese ore and ferroalloys: market and competition

The markets for manganese ore and ferroalloys are highly competitive. Competition in the manganese ore market takes place in two segments. High-grade manganese ore competes on a global seaborne basis, while low-grade ore competes on a regional basis. For some manganese ferroalloys, high-grade ore is mandatory, while for others high- and low-grade ores are complementary. The main suppliers of high-grade ores are located in South Africa, Gabon, Australia and Brazil. The main producers of low-grade ores are located in Ukraine, China, Ghana, Kazakhstan, India and Mexico.

The manganese ferroalloy market is characterized by a large number of participants who compete primarily on the basis of price. The principal competitive factors in this market are the costs of manganese ore, power, logistics and reductants, like copper and coal. Vale competes with stand-alone producers and integrated producers that also mine their own ore. The Company competitors are located mainly in countries that produce manganese ore or carbon steel.

2. Base Metals

2.1 Nickel

2.1.1 Operations

Vale conducts its nickel operations mainly through its wholly-owned subsidiary Vale Canada, which operates two nickel production systems, one at the North Atlantic and one in Asia-Pacific. The Company also operates a third nickel production system, Onça Puma, in South Atlantic. Vale s nickel operations are presented in the table below.

Mining System / Company	Location	Description / History	Operations	Mining license	Power source	Access / Transportation
North Atlantic						
Vale Canada	Canada Sudbury, Ontario	Integrated mining, crushing, smelting and refining	Primarily underground mining	Patented mining rights with no	Power provided by the Ontario	Located at the TransCanada road and two

	operations to turn ore into refined nickel with nominal capacity of 66,000 metric tons of refined	operations with sulfate nickel with some copper, cobalt,	expiration date; mining	power network and	main railroads cross Sudbury. Finished products are

Table of Contents

Mining System / Company	Location	Description / History	Operations	Mining license	Power source	Access / Transportation
		nickel per year and additional feed of nickel oxide to the refinery in Wales. Mining operations in Sudbury started in 1885. Vale acquired Sudbury operations in 2006.	PGMs, gold, and silver. The Company also conducts smelting and refining of nickel concentrate at its operations in Voisey s Bay. Additionally, to producing finished nickel in Sudbury, Vale sends an intermediate product, nickel oxide, to its nickel refinery in Wales to process it into end products. Vale also is able to send nickel oxide to Asian Vale refineries. As part of Vale s efforts to reduce sulphur dioxide emissions and other emissions for purposes of compliance with Ontario and Manitoba rules changes and rationalize its foundry and refining assets throughout Canada, Vale will change its processes, including a change to a unique furnace in Sudbury in 2017.	leases end in 2016 and 2035; and mining license with undetermined validity term.(1)	produced directly by Vale.	delivered to the North-American market by truck. For customers abroad, products are loaded in containers and travel in intermodal model (truck / train / cargo vessel) for ports in Canada s eastern and western coast.
Vale Canada	Canada Thompson,	Integrated mining, crushing, smelting	Primarily underground	Application before the	Power provided by	Finished products are

	Manitoba	and refining operations to turn ore into refined nickel with nominal	mining operations with sulfate nickel. These resources also	Lease Council matures	public utilities at	delivered to the North-American market by

Table of Contents

Mining System / Company	Location	Description / History	Operations	Mining license	Power source	Access / Transportation
		capacity of 50,000 metric tons of refined nickel per year. Mining at Thompson was discovered in 1956 and acquired by Vale in 2006.	contain some copper and cobalt. The local concentrate with nickel concentrate at the operations in Voisey s Bay for smelting and refining aiming to achieve a high quality nickel plate product. Vale is considering eliminating smelting and refining processes in Thompson, due to new federal rules of sulfur dioxide emissions to be in force in 2015. Vale initially ensured an extension of the deployment of the current Pollution Prevention Plan under the terms in the Canadian Environment Protection Law with Environment Canada that allows smelting and refining until 2018, subject to negotiated issuance limits.	between 2020 and 2025; mining leases end in 2034.	the province.	truck. For customers abroad, products are loaded in containers and travel in intermodal model (truck / train / cargo vessel) for ports in Canada s eastern and western coast.
Vale Newfoundland & Labrador Limited	Canada Voisey s Bay and Long Harbour, Newfound-land & Labrador	Open pit mine and ore processing into intermediate and end products nickel and copper	Comprised by the Ovoid open pit mine and deposits for underground	Mining concession end in 2027, with right to later renewals,	The power at Voisey s Bay is 100% provided by Vale diesel	Nickel and copper concentrates are carried to the port by trucks

	concentrate with estimated nominal capacity of approximately 50,000 metric tons of refined	operations at a later moment. Vale extracts sulfate nickel ore, which also contain some copper	always for	generators. The	and then are shipped on solid bulk vessels for

Table of Contents

Mining System / Company	Location	Description / History	Operations	Mining license	Power source	Access / Transportation
		nickel per year, with the growth of the Long Harbour plant. s Bay operations started in 2005 and were acquired by Vale in 2006.	and cobalt. Most part of the nickel concentrates are currently sent to Vale operations in Sudbury and Thompson, for final processing (smelting and refinery), while copper concentrate is sold in the market. The Long Harbour plant continued the ramp-up in 2015. During preparation in 2015, Long Harbour processed a mix of concentrate with high nickel content from Voisey s Bay with nickel matt from PT Vale Indonesia Tbk PTVI and will migrate to concentrates from Voisey s Bay in 2016.	ten-year periods.	power at the Long Harbour refinery is provided by public utilities at the province.	external markets or Vale s operations in Long Harbour or other Canadian operations for additional refining.
Vale Europe Limited	UK Clydach, Wales	Autonomous nickel refinery (producer of refined nickel), with nominal capacity of 40 thousand metric tons per year. The Clydach Refinery started operations in 1902 and was acquired by Vale in 2006.	Processes a nickel intermediate product nickel oxide, provided by Sudbury or Matsuzaka to produce refined nickel as powder or pellets.		Power provided by the national power network.	Transported for the end customer in the United Kingdom and the continental Europe by truck. Products are sent to customers abroad by truck to the ports in Southampton and Liverpool, and shipped into ocean

containers.

Asia-Pacific

Table of Contents

Mining System / Company	Location	Description / History	Operations	Mining license	Power source	Access / Transportation
PT Vale Indonesia Tbk (PTVI,)	Indonesia Sorowako, Sulawesi	Open pit mine and respective processing plant (producer of matte nickel, and intermediate product) with nominal capacity of approximately 80,000 metric tons of matte nickel per year. PTVI stock are traded at the Indonesia Stock Exchange. Vale indirectly holds 59.3% of the capital stock of PTVI and Sumitomo Metal Mining Co., Ltd (Sumitomo) holds 20.2% and Sumitomo Corporation holds 0.1% and the public holds 20.5%. PVTI was created in 1968, started operations in 1978 and was acquired by Vale in 2006.	PTVI extracts lateritic nickel ore and produces matte nickel which is sent to refineries in Japan. According to guaranteed sale agreements during the mine use life, PTVI sells 80% of its production to its wholly-owned subsidiary Vale Canada and 20% to Sumitomo.	The employment agreement ends in 2025, with the right to extend its operations until, for two consecutive ten-year periods, subject to the approval of the Government of Indonesia.	Power produced at PTVI low cost hydroelectric power plants in the Larona River (there are currently three units). PTVI has thermal generators to complement its power supply with a power source that is not subject to hydrological factors.	Carried by truck for approximately 55 km to the river port, in Malili, and shipped in barges to load cargo ships to send to Japan.
Vale Nouvelle-Calédonie S.A.S (VNC)	New Caledonia Southern Province	Mining and processing operations (producer of nickel oxide and cobalt carbonate). VNC shares are held by Vale (80.5%), Sumic (14.5%) and Société de Participation Minière du Sud Caledonien SAS (SPMSC) (5%).(2)	Vale s nickel operations in New Caledonia are in ramp-up. VNC uses a high-pressure acid leaching process (HPAL) to handle lateritic limonitic and lateritic saprolitic ores. Vale expects to continue with the ramp-up in VNC in the next three years	Mining concession ending between 2016 and 2051. VNC requested a renewal of the only concession that is due to end in 2015.	Power supplied by the national power network and independent producers.	Products are carried into containers and transported by truck for approximately 4 km to the Prony port and shipped in an ocean container.

175

Table of Contents

Mining System / Company	Location	Description / History	Operations	Mining license	Power source	Access / Transportation
			to reach nominal production capacity of 57,000 metric tons per year of nickel contained as nickel oxide, to be subsequently processed in its facilities in Asia, as hydroxide (IPNM) and 4,500 metric tons of cobalt as carbonate.			
Vale Japan Limited	Japan - Matsuzaka	Autonomous nickel refinery (producer of refined nickel), with nominal capacity of 60,000 metric tons per year. Vale holds 87.2% of shares, and Sumitomo holds the remaining stock. The refinery was built in 1965 and acquired by Vale in 2006.	Produces intermediate products to be subsequently treated in Vale s refineries in Asia and the United Kingdom, and nickel end products using matte nickel provided by PTVI.		Power provided by the national power network. Acquired from regional utilities.	Products are transported by public roads to customers in Japan. For customers abroad, products are carried into containers in the plant and sent through the Yokkaichi and Nagoya ports.
Vale Taiwan Ltd	Taiwan - Kaoshiung	Autonomous nickel refinery (producer of refined nickel), with nominal capacity of 18,000 metric tons per year. The refinery started production in 1983 and was acquired by Vale in 2006.	Produces refined nickel for the stainless steel industry, using intermediate products from Vale operations in Matsuzaka and New Caledonia.		Power provided by the national power network. Acquired from regional utilities.	Products transported by truck on public roads for customers in Taiwan. For customers abroad, products are carried into containers at the plant and sent through the Kaoshiung port.

Table of Contents

Mining System / Company	Location	Description / History	Operations	Mining license	Power source	Access / Transportation
Vale Nickel (Dalian) Co. Ltd	China - Dalian, Liaoning	Autonomous nickel refinery (producer of refined nickel), with nominal capacity of 32,000 metric tons per year. Vale holds 98.3% of shares and a Ningbo Sunhu Chemical Products Co., Ltd. holds the remaining 1.7%. The refinery started production in 2008.	Produces refined nickel for the stainless steel industry, using intermediate products mainly from Vale operations in Matsuzaka and New Caledonia.		Power provided by the national power network. Acquired from regional utilities.	Product carried by truck on public roads and railroads for customers in China. Also provided by containers for some foreign and domestic customers.
South Atlantic						
Vale/Onça Puma	Brazil - Ourilândia do Norte, Pará	Mining, smelting, and refining operations producing high quality ferro-nickel to be used in the stainless steel industry	The Onça Puma mine is built over a nickel deposit of lateritic and saprolitic ore. The operation produces ferro-nickel through a rotating electric furnace process. Vale is currently operating with one single line, which nominal capacity is estimated at 25,000 metric tons per year. The Company will consider opportunities to restart operations at the second line, depending on market perspectives and performance of the single- line furnace.	Mining concession for undetermined period.	Power provided by the national power network, produced directly by Vale or acquired under power purchase contracts.	Ferro-nickel is transported by paved public road and by railroad to Vila do Conde maritime terminal, in the Brazilian State of Pará. Exporting operations are done in ocean containers.

In Sudbury, eight concessions will end in 2016. Vale filed applications to renew these concessions, but the approval process may take several years. Vale will be able to continue with its operations during the approval procedures.

Sumic is a joint venture between Sumitomo and Mitsui. Considering that VNC did not meet a specific production goal by December 2015, Vale Canada will acquire all the interests of Sumic held in VNC according to the shareholders agreement of

Table of Contents

VNC. The share purchase price is US$135 million and Vale Canadá will settle a total value of US$ 218 million of debt financing granted by Sumic to VNC. The transaction is to be concluded in March 2016, but the payment for the purchase by Vale Canadá and the settlement of the financing by Sumic should occur in March 2017. Upon conclusion of the transaction in March 2016, Vale will hold 95% of the shares of VNC. The other shareholder, SPMSC, must increase its share in VNC to 10% in two years starting at the beginning of the commercial production.

Table of Contents

2.1.2 Production

The following table sets forth Vale s annual mine production by operating mine (or on an aggregate basis for areas operating in Sulawesi, operated by PTVI, in Indonesia) and the average percentage grades of nickel and copper. The mine production at Sulawesi represents the product from PTVI s dryer kilns delivered to PTVI s processing operations and does not include nickel losses due to drying and smelting. For Vale operations in Sudbury, Thompson and Voisey s Bay, the production and average grades represent the mine product delivered to those operations respective processing plants and do not include adjustments due to processing, smelting or refining. For VNC operations, in New Caledonia, production and average content represent local ore production, without losses due to processing.

	Production during fiscal year ending December 31								
	2013			2014			2015		
		Grade			Grade			Grade	
	Production	Copper (%)	Nickel (%)	Production	Copper (%)	Nickel (%)	Production	Copper (%)	Nickel (%)
Ontario operating mines									
Copper Cliff									
North	913	1.32	1.28	1,053	1.45	1.34	1,138	1.42	1.38
Creighton	915	2.01	2.19	903	1.81	2.47	774	2.00	2.33
Stobie	1,887,	0.59	0.65	2,089	0.58	0.66	1,471	0.63	0.73
Garson	815	1.42	1.75	678	1.39	1.75	778	1.39	1.94
Coleman	1,515,	3.15	1.52	1,385	3.10	1.52	1,309	2.95	1.56
Ellen	109	0.49	1.00	181	0.62	1.07	165	0.70	0.95
Totten	64	1.84	1.92	303	1.98	1.50	528	1.88	1.62
Gertrude	196	0.32	0.89						
Total Ontario operations	6,414,	1.61	1.33	6,591	1.57%	1.36	6,164	1.64	1.46
Manitoba operating mines									

Table of Contents

	Production during fiscal year ending December 31								
	2013			2014			2015		
		Grade			Grade			Grade	
	Production	Copper (%)	Nickel (%)	Production	Copper (%)	Nickel (%)	Production	Copper (%)	Nickel (%)
Thompson	1,175		2,07	1,184		1.95	1,163		1.82
Birchtree	613		1,39	545		1.39	564		1.47
Total Manitoba operations	1,788		1,84	1,729		1.78%	1,727		1.71
Voisey s Bay operating mines									
Ovoid	2,318	1,68	2,89	2,243	1.54%	2.58%	2,328	1.51	2.57
Sulawesi operating mining areas									
Sorowako	4,369		2,00	4,391		1.99%	4,694		1.99%
Mine operations in New Caledonia									
VNC	1,860		1,36	2,134		1.44%	2,561		1.41%
Mines in operation in Brazil									
Onça Puma	263		2,28	1,358		2.19%	1,024		2.13%

The following table sets forth information about Vale s nickel production, including: (i) nickel refined at its facilities, and (ii) intermediates designated for sale. The figures below are reported on an ore-source basis.

		Production for fiscal year ending December 31		
Mine	Type	2013	2014	2015
		(Thousands of metric tons)		
Sudbury (1)	Underground	69.4	64.3	54.4
Thompson (1)	Underground	24.5	26.1	24.8
Voisey s Bay(2)	Open pit	63.0	48.3	53.0

Table of Contents

Sorowako (3)	Open pit	78.8	78.7	79.5
Onça Puma(4)	Open pit	1.9	21.4	24.4
New Caledonia (5)	Open pit	16.3	18.7	26.9
External (6)		6.4	17.5	27.6
Total(7)		260.2	274,9	290.6

(1) Primary nickel production only (i.e., does not include secondary nickel from unrelated parties).

(2) Includes finished nickel produced at its Sudbury and Thompson operations, although informed based on the ore source in Voisey s Bay.

(3) These figures are not required to reflect Vale s share. Vale holds 59.2% interest in PTVI, which owns the Sorowako mines.

(4) Primary nickel production only. Nickel found in iron nickel.

(5) Nickel found in nickel hydroxide (NHC) and nickel oxide (NiO). These figures are not required to reflect Vale s share. Vale holds 80.5% in VNC.

(6) Finished nickel processed at Vale s facilities using feeds purchased from unrelated parties.

(7) These figures do not include tolling of feeds for third-party.

2.1.3 Clients and sales

Vale s nickel customers are broadly distributed on a global basis. In 2015, 48% of the total nickel sales of Vale were delivered to customers in Asia, 24% to North America, 27% to Europe and 1% to other markets. Vale has short-term fixed-volume contracts with customers for the majority of its expected annual nickel sales. These contracts generally provide stable demand for a significant portion of its annual production.

Nickel is an exchange-traded metal, listed on the London Metal Exchange (LME), and most nickel products are priced according to a discount or premium to the LME price, depending primarily on the nickel product s physical and technical characteristics. Vale s finished nickel products represent what is known in the industry as primary nickel, meaning nickel produced principally from nickel ores (as opposed to secondary

nickel, which is recovered from recycled nickel-containing material). Finished primary nickel products are distinguishable according to the following characteristics, which determine the product price level and the suitability for various end-use applications:

Table of Contents

- Nickel content and purity level: (i) intermediate products present various levels of nickel content, (ii) nickel pig iron has 1.5% to 6% nickel, (iii) ferro-nickel has 10% to 40% nickel, (iv) finished nickel presenting less than 99.8% of nickel, including products such as Tonimet and Utility Nickel , (v) standard LME grade nickel has a minimum of 99.8% nickel, and (vi) high purity nickel has a minimum of 99.9% nickel and does not contain specific elemental impurities;

- Shape (such as pellets, discs, squares, strips and foams); and

- Size (which varies according to the type of product and covers spherical products, as powder with less than one micron or 5mm granulates, and rectangular formats, as 1,000 mm x 750 mm x 15 mm cathode leaves).

In 2015, the principal end-use applications for nickel were:

- Stainless steel (67% of global nickel consumption);

- Non-ferrous alloys, alloy steels and smelting (17% of global nickel consumption);

- Nickel plating (7% of global nickel consumption); and

- Specialty applications, such as batteries, chemicals and powder metallurgy (9% of global nickel consumption).

In 2015, 58% of Vale s refined nickel sales were made into non-stainless steel applications, compared to the industry average for primary nickel producers of 33%, offering better stability for its sales volumes. As a result of Vale s focus on such higher-value segments, the average realized nickel prices for refined nickel have typically exceeded LME cash nickel prices.

The Company offers sales and technical support to its customers on a global basis. The Company has a well-established global marketing network for refined nickel, based in Toronto, Canada. Vale also has sales and technical support offices in St. Prex (Switzerland), Saddle Brook, New Jersey (United States), Tokyo (Japan), Shanghai (China), Singapore, and Kaohsiung (Taiwan).

2.1.4 Competition

The global nickel market is highly competitive. Vale s key competitive strengths include its long-life mines, low production costs compared to other nickel producers, sophisticated exploration and processing technologies, along with a diversified portfolio of products. The global marketing reach, diverse product mix, and technical support direct the products to the applications and geographic regions that offer the highest margins for its products.

Nickel deliveries of Vale represented 15% of global consumption for primary nickel in 2015. In addition to Vale, the largest suppliers in the nickel industry (each with their own integrated facilities, including nickel mining, processing, refining and marketing operations) are: Mining and Metallurgical Company Norilsk Nickel, Jinchuan Nonferrous Metals Corporation, and Glencore South 32. Together with Vale, these companies accounted for about 46% of global finished primary nickel production in 2015.

While stainless steel production is a major driver of global nickel demand, stainless steel producers can use nickel products with a wide range of nickel content, including secondary nickel (scrap). The choice between primary and secondary nickel is largely based on their relative prices and availability. Between 2012 and 2015, secondary nickel has accounted for about 40% to 43% of total nickel used to manufacture stainless steels, and primary nickel has accounted for about 57% to 601%. Nickel pig

Table of Contents

iron is a low-grade nickel product made mainly in China from imported lateritic ores that is suitable for use in stainless steel production. Starting in January 2014, the production of nickel pig iron in China was adversely affected by the restrictions on the exportation of unprocessed ore in Indonesia. Thus, there is an estimate that the nickel pig iron production dropped 20% year after year to approximately 360,000 metric tons, representing 23% of the global supply of primary nickel. The significant ore inventories stored in Indonesia and China, as well as the increased importation of the ore by the Philippines, minimized the effects of this drop in nickel pig iron production in 2015. Vale expects that the nickel pig iron production in China will drop even more in 2016 and 2017, with the end of high quality ore reserves in China.

Competition in the nickel market is based primarily on quality, reliability of supply and price. Vale believes its operations are competitive in the nickel market because of the high quality of its nickel products and its relatively low production costs.

2.2 Copper

2.2.1 Operations

Vale operates its copper businesses in Brazil at the parent-company level and in Canada through its wholly-owned subsidiaries.

Mining complex / Location	Location	Description / History	Mining / Operations	Mining License	Power source	Access / Transportation
Brazil						
Vale/Sossego	Carajás, State of Pará	Two main areas of copper, Sossego and Sequeirinho, and a processing facility to concentrate the ore. Sossego was developed by Vale and started production in 2004; with nominal capacity of 100,000 Terapascal (tpa) of copper concentrate.	Copper ore is explored in an open pit mine and is processed by primary crushing and transportation, SAG milling (a semiautogene mill using a large rotating drum full of ore, water and steel crushing spheres transform the ore into a fine paste), milling, copper fluctuation in concentrate, waste disposal, concentrate, discharge filter.	Mining concession for undetermined period.	Power provided by the national power network, produced directly by Vale or acquired under power purchase contracts.	The concentrate is transported by truck to the storage terminal in Parauapebas and, subsequently, is taken by the EFC to the port of Itaqui, in São Luís, State of Maranhão. Vale built an 85 km road connecting Sossego to Parauapebas.

Table of Contents

Mining complex / Location	Location	Description / History	Mining / Operations	Mining License	Power source	Access / Transportation
Vale/Salobo	Carajás, State of Pará	The Salobo I processing plant started production in 2012 and has a total capacity of 100,000 tpa of copper concentrate. The open pit mine and the plant are working on the increase of the capacity to 200.000 tpa of copper concentrate, with total deployment of the expansion of Salobo II.	Vale s copper and gold mine in Salobo is an open pit mine and the ore is processed by primary and secondary standard crushing, rollers, sphere milling, concentrate copper floating, residue disposal, concentrate closeness, disposal filter.	Mining concession for undetermined period.	Power provided by the national power network, acquired under the terms of power purchase agreements.	The concentrate is transported by truck to the storage terminal in Parauapebas and, subsequently, is taken by the EFC to the port of Itaqui, in São Luís, State of Maranhão. Vale built a 90 km road connecting Salobo to Parauapebas.
Canada						
Vale Canada	Canada Sudbury, Ontario	See Base metals Nickel Operations	Vale generates two intermediate copper products: copper concentrate and copper anodes. Vale also produces copper finished products, copper cathodes of electrolytic copper as by product of nickel refining operations. As part of Vale s efforts to reduce sulphur dioxide emissions and other emissions for purposes of compliance with Ontario and Manitoba rules changes and rationalize its foundry and refining assets throughout Canada, Vale will change its	See table of Vale s nickel operations.		

Table of Contents

Mining complex / Location	Location	Description / History	Mining / Operations	Mining License	Power source	Access / Transportation
			processes, including a change to a unique furnace in Sudbury in 2017. In order to prepare for this change, Vale will close the copper anode production unit in Sudbury in 2016, causing increase to the copper concentrate and copper intermediate productions.			
Vale Canada/Voisey s Bay	Canada Voisey s Bay, Newfoundland and Labrador	See Base metals Nickel Operations	At Voisey s Bay, Vale produces concentrate copper.	See table of Vale s nickel operations		
Zambia						
Lubambe	Zambian Copperbelt	Lubambe copper mine (formerly known as Konkola North), includes an underground mine, plant and related infrastructure. Teal Minerals (TEAL) (50/50 joint venture of Vale and African Rainbow minerals (ARM) indirectly holds 80% interest in Lubambe. ZCM Investments Holding PLC holds the remaining share (20%).	Nominal production capacity of 45,000 metric tons per year of concentrate copper. Production started in October 2012.	Mining concessions end in 2033.	Long term power supply agreement with a Zesco (power supplier owned by the government of Zambia).	Concentrate copper is transported by truck to local smelters.

Table of Contents

2.2.2 Production

The following table provides information about Vale s copper production.

Mine	Type	Fiscal year ending December 31 2013	2014	2015
			(million metric tons)	
Brazil:				
Salobo:	Open pit	65	98	155
Sossego	Open pit	119	110	104
Canada:				
Sudbury	Underground	103	98	98
Voisey s Bay	Open pit	36	33	32
Thompson	Underground	2	2	1
External (1)		24	29	23
Chile:				
Tres Valles (2)	Open pit and underground	11		
Zambia:				
Lubambe (3):	Underground	9	10	10
Total		370	380	424

Vale processes copper at its facilities using third party resources.

Vale sold Tres Valles in December 2013. Production in 2013 refers to production by the end of October

Vale s attributable production capacity is 40%, representing 80% of indirect interest by means of its 50% share.

2.2.3 Clients and sales

The copper concentrate from Sossego and Salobo is sold under mid and long-term contracts executed with copper smelters in Europe, India, and Asia. Vale maintains medium- and long-term copper distribution agreements with Glencore Canada, to sell anode copper and a significant part of copper concentrate produced in Sudbury. Copper concentrate from Voisey s Bay is sold under mid-term agreements with clients in Europe. Electrolytic copper from Sudbury is sold in North America under short-term sale agreement.

2.2.4 Competition

The copper global market is highly competitive. Producers are mining companies and customized smelters that cover all areas of the world; the customers are mostly producers of copper wires, rods and alloy. Competition takes place mostly at a regional

Table of Contents

level, and is based mostly in production, quality, distribution reliability and logistics costs. The largest cathode copper producers in the world are Corporación Nacional del Cobre de Chile (Codelco), Aurubis AG, Glencore Xstrata, Freeport-McMoRan Copper & Gold Inc. (Freeport-McMoRan), Jiangxi Copper Corporation Ltd and Glencore, operating at the parent company level or through subsidiaries. Vale s participation in the global refined copper cathodes market is negligible, because Vale has adopted a more competitive market position for copper concentrate.

Copper concentrate and copper anodes are intermediate products in the copper production chain. The concentrate and anode markets are competitive, with several producers, but few participants and smaller volumes than in the cathode copper market due to the high levels of integration of large copper producers.

In the copper concentrate market, the main producers are mining companies located in South America, while the consumers are smelters located mainly in Europe and Asia. Competition in the copper concentrate market takes place mostly at a global level, and is based mostly in product cost, quality, logistics costs and distribution reliability. Main competitors in the copper concentrate market are BHP Billiton, Freeport-McMoRan, Glencore, Codelco, and Antofagasta plc, operating at a parent company level and through subsidiaries. Vale s market share in 2015 was approximately 4% of the total concentrate market.

The copper anode/blister market is very limited. In general, anodes are produced to supply the integrated refining of every company. Anode/blister trade is limited to facilities that have more smelting capacity than what the plant can handle or the financial situation regarding logistics costs is an incentive to purchase anodes from other smelters. The main competitors in the anode market in 2015 were Codelco, Glencore, and China Nonferrous Metals, operating at a parent company level or through its subsidiaries.

2.3 PGM and other precious metals

As by-products of the Sudbury nickel operations in Canada, Vale recovers significant quantities of metals of the platinum group, as well as small quantities of gold and silver. Vale operates a processing facility in Port Colborne, Ontario, which produces PGMs, gold and silver intermediate products, using feeding from the operation in Sudbury. Vale has a refinery in Acton, England, where it processes intermediate products, as well as feeds purchased from unrelated parties and toll refined products. In the fiscal year ending on December 31, 2015, PGM concentrates from its Canadian operations account for 60% of its PGM production, which also includes metals purchased from unrelated parties. The base metal commercial department sells PGMs and other precious metals, as well as products from unrelated parties and toll-refined products, based on commission. Vale s copper concentrate from the Salobo and Sossego mines in Carajás, State of Pará, Brazil, also contain gold, which value is considered in the sale of such products.

In February 2013, Vale Switzerland S.A. signed an agreement with Silver Wheaton Corp. to sell 70% of the gold produced as a byproduct at its nickel mines in Sudbury, in Canada, in the next 20 years, and with Silver Wheaton (Caymans) Ltd. to sell 25% of payable gold flows produced as byproduct at its copper mine in Salobo, in Brazil, during the mine use life.

Additionally, on March 2, 2015, Vale executed a contractual amendment with Silver Wheaton (Caymans) Ltd., a wholly-owned subsidiary for purpose of selling the additional 25% flow of payable gold, produced as sub product of copper mining at the Salobo mine during the mine s use life. Under the terms in the goldstream agreement, Silver Wheaton received 141,879 troy ounces of gold in 2015. For further information on the

contracts executed with Silver Wheaton Corp. and Silver Wheaton (Caymans) Ltd., see items 5.2(e), 6.7, and 10.3 (b) in this Reference Form.

Table of Contents

The following table presents information on the Company s production of precious metals.

Mine(1)	Type	Fiscal year ending December 31 2013	2014	2015
			(Thousand troy ounces)	
Sudbury:				
Platinum	Underground	145	182	154
Paladium	Underground	352	398	341
Gold	Underground	91	83	89
Salobo:				
Gold	Open pit	117	160	251
Sossego:				
Gold	Open pit	78	78	80

Figures represent 100% of the gold production in Salobo and Cadbury and do not exclude the portion of gold sold to Silver Wheaton

2.4 Cobalt

Vale recovered significant quantities of cobalt, classified as a minor metal, as a by-product of its nickel operations. In the year ending on December 31, 2015, the Company produced 1,448 metric tons of refined cobalt metal at the Port Colborne refinery 2,926 metric tons of cobalt in a cobalt-based intermediate at the nickel operations in Canada and New Caledonia, the remaining cobalt production consisted of 159 metric tons of cobalt contained in other intermediate products (such as nickel concentrates). As result of the ramp-up of VNC operations in New Caledonia, the production of intermediate cobalt as by-product of nickel production is increasing. Vale sold cobalt on a global basis. Its cobalt metal, which is electro-refined at the Port Colborne refinery, has very high purity levels (99.8%), value higher than specified in LME contracts. Cobalt metal is used in the production of various alloys, particularly for aerospace applications, as well as the manufacture of cobalt-based chemicals.

The following table sets forth information on Vale s cobalt production.

Mine	Type	Fiscal year ending December 31 2013	2014	2015
			(Metric tons)	
Sudbury	Underground	853	833	751

Table of Contents

Thompson	Underground	292	489	365
Voisey s Bay	Open pit	256	952	849
New Caledonia	Open pit	1,117	384	2,391
External sources (1)		13	84	177
Total		3,532	743	4,533

3. Coal

3.1. Operations

Vale produces metallurgic and thermal coal by its subsidiaries Vale Moçambique, which operates the Moatize mine, and Vale Australia, which operates the mine in Carborough Downs. Vale also holds minority interest in the Chinese company, Henan Longyu Energy Resources Co., Ltd. (Longyu).

In December 2014, Vale executed an investment contract in order to have Mitsui acquire 15% of its interest in Vale Moçambique. Its interest in Vale Moçambique will be transferred to a company under common control of Vale (85%) and Mitsui (15%). The value attributed to the 15% interest held by Mitsui in Vale Moçambique is US$ 450 million, and Mitsui is responsible for 15% of capital expenditures incurred since the date of execution of the contract. This transaction is subject to certain precedent conditions and closure is expected to occur in 2016.

Company / Mining complex	**Location**	**Description / History**	**Mining / Operations**	**Mining license**	**Power source**	**Access / Transportation**
Mozambique						
Vale Moçambique						
Moatize	Tete, Mozambique	Open pit mine developed directly by Vale. Operations started in August 2011 and should achieve nominal production capacity of 22 Mtpa, considering the Moatize expansion, comprised of metallurgic and thermal coal, and the	Produces metallurgic and thermal coal. The main brand product of Moatize is Chipanga premium hard coking coal, but there is	Mining concession ends in 2032, renewable after this date.	Power provided by local utility companies. Supply of local back-up.	Coal is transported from the mine to the port of Beira through railroad Linha do Sena and,

189

Table of Contents

Company / Mining complex	Location	Description / History	Mining / Operations	Mining license	Power source	Access / Transportation
		expansion of the Nacala Logistic Corridor. Vale holds 95.0% interest and the remaining shares are held by Empresa Moçambicana de Exploração Mineira, S.A. Due to conclusion of the agreement executed in December 2014, Mitsui will acquire 15% of Vale s share in Vale Moçambique.	operational flexibility for other products. The ideal product portfolio will come as result of market surveys. Coal from mines is processed at a coal handling and preparation plant CHPP) with capacity of 4,000 metric tons per hour.			starting in January 2016, to the port of Nacala-a-Velha, through the Nacala Corridor.
Australia						
Integra Coal	Hunter Valley, New South Wales	Acquired from AMCI in 2007. Mining concessions at Carborough Downs include Rangal Coal Measures, in Bowen Basin, with the Leichardt and Vermont reserves. Both present coking properties and may be processed to produce metallurgic coal products and pulverized coal injection (PCI). Vale holds 90.0% interest and the remaining shares are held by JFE, Posco.	Metallurgic coal. The Leichardt reserve is the main development goal of Vale and comprises 100% of the reserve and current resources. The coal from Carborough Downs is processed at the Carborough Downs CHPP, with processing capacity of 1,000 metric tons per hour.	Mining leases expire in 2035 and 2039.	Power provided by the national power network, acquired from local regional utility companies.	The product is carried in trains at the loading rail station and carried for 163 km to the Dalrymple Bay Coal terminal, in Queensland, Australia.

Table of Contents

3.2 Production

The table below presents information on Vale s marketing coal production.

Operation	Mine type	Production during fiscal year ending December 31 2013	2014	2015
			(thousand metric tons)	
Metallurgic coal:				
Vale Australia				
Integra Coal(1)(4)	Underground and open pit	1,410	715	
Isaac Plains(2)	Open pit	656	746	
Carborough Downs(3)	Underground	2,447	1,857	2,383
Vale Moçambique				
Moatize(5)	Open pit	2,373	3,124	3,401
Total metallurgic coal		6,885	6,443	5,784
Thermal coal:				
Vale Australia				
Integra Coal(1)	Open pit	87	92	
Isaac Plains(2)	Open pit	347	326	
Vale Moçambique				
Moatize(5)	Open pit	1,444	1,784	1,560
Total thermal coal		1,878	2,202	1,560

(1) These figures correspond to Vale s interest of 64.8% in Integra Coal, from the sale of Vale s share in December 2015

(2) These figures correspond to Vale s interest of 50.0% in Isaac Plains, from the sale of Vale s share in November 2015 a joint venture constituted as a partnership.

(3) The figures for 2013 and 2014 correspond to Vale s interest of 85.0% in Carborough Downs. Vale s interest in Carborough Downs increased to 90% in December 2014. The figures for 2015 correspond to Vale s interest of 90% in Carborough Downs.

(4) Operations at Integra Coal and Isaac Plains are suspended since May and November 2014, respectively, and Vale s share in each mine, as well as respective assets, was sold in December and November 2015, respectively

(5) These figures refer to 100% production at Moatize, and are not adjusted to reflect Vale s portion.

Table of Contents

3.3 Clients and sales

Coal sales at Vale s operations in Australia are basically geared towards the Eastern Asian market. The coal sales from its Moatize operations, in Mozambique, aim global steel and power markets, including Asia, India, Africa, Europe and Americas. Vale s Chinese coal joint ventures directed their sales to the Chinese market.

3.4 Competition

The global coal industry, basically made up by the hard coal (metallurgical and thermal) and brown / lignite coal markets, is highly competitive.

The demand for steel, particularly in Asia, continues to promote a strong demand for metallurgical coal, while the power demand supports the demand for thermal coal. Vale expects a strong supply and lower prices for metallurgical coal in the coming years, reducing investments in greenfield projects, which may cause unbalance in the long term supply. Port and railroad limitations in some production areas, which cannot be solved without significant capital investment, may lead to a limited availability of additional metallurgical coal.

Competition in the coal industry is based mostly in production cost savings, coal quality, and transportation cost. Vale s main competitive advantages are ownership of a new and competitive transportation corridor, proximity compared to the Atlantic and Indian markets (compared to its main competitors) and the size and quality of Vale reserves.

The main participants in the transoceanic coal market are subsidiaries and affiliates and joint ventures BHP Billiton, Glencore Xstrata, Anglo American, Rio Tinto, Teck Cominco, Peabody, Walter Energy, and Shenhua Group, and others.

4. Fertilizers

Phosphates

Vale operates its phosphate business through its subsidiary and joint venture, as presented in the table below.

		Our participation (%)		
Firm	**System**	**Voting**	**Total**	**Our partners**
Vale Fertilizantes	Uberaba, Brazil	100.0	100.0	

Compañia Minera Miski Mayo S.R.L., located in Bayóvar, Peru.	Bayóvar, Peru(1)	51.0	40.0	Mosaic, Mitsui & Co.

Vale s share in Compañia Minera Miski Mayo S.R.L. is held through MVM Resources International B.V.

Vale Fertilizantes is a company that produces phosphate rock, phosphate fertilizers (P), (e.g. monoammonium phosphate (MAP), dicalcium phosphate (DCP), triple superphosphate (TSP) and single superphosphate (SSP)) and nitrogen (N) fertilizers (e.g., ammonia and ammonium nitrate). It is the largest producer of phosphate and nitrogen crop nutrients in Brazil. Vale Fertilizantes operates the following phosphate rock mines by means of concessions for undetermined term: Catalão, in

Table of Contents

the State of Goiás, Tapira and Patos de Minas and Araxá, in the State of Minas Gerais, and Cajati, in the State of São Paulo, all in Brazil. In addition, Vale Fertilizantes has nine processing plants for the production of phosphate and nitrogen nutrients located in Catalão, Goiás; Araxá, Patos de Minas, and Uberaba, all located in the state of Minas Gerais; Guará, Cajati, and three plants in Cubatão, all located in the state of São Paulo.

Table of Contents

Since 2010, Vale also operates the Bayovar phosphate rock, in Peru, with nominal production capacity of 3.9 Mtpa, by means of one concession for undetermined term.

The following table contains information regarding Vale s phosphate rock production.

Mine	Type	Fiscal year ending December 31 2013	2014	2015
			(million metric tons)	
Bayóvar	Open pit	3,546	3,801	3,881
Catalão	Open pit	1,057	1,055	1,000
Tapira	Open pit	1,869	2,055	1,970
Patos de Minas	Open pit	53	73	23
Araxá	Open pit	1,111	883	707
Cajati	Open pit	640	605	581
Total		8,277	8,421	8,163

Operations in Pato de Minas was suspended in the third quarter in 2015 due to market conditions.

The following table contains information regarding Vale s production of phosphate and nitrogen nutrients.

Product	Fiscal year ending December 31 2013	2014	2015
		(million metric tons)	
Monoammonium phosphate (MAP)	1,128	1,065	1,097
Triple superphosphate (TSP)	905	910	866
Single superphosphate (SSP)	2,102	1,854	1,953
Bicalcium phosphate (DCP)	444	502	480
Ammonia(1)	347	178	138
Urea(2)	219	0	
Nitric acid	416	469	475
Ammonium Nitrate	419	485	515

(1) After the sale of Araucária in June 2013, Vale produces ammonia only in the plant in Cubatão.

(2) After the sale of Araucária in June 2013, Vale no longer produces urea.

Table of Contents

4.2 Potash

Vale s potash operations are concentrated in Brazil and are carried out by the group comptroller, Vale S.A., at the parent-company level, by means of mining concessions for undetermined term. Vale entered a leasing agreement for Taquari-Vassouras, the only potash mine in Brazil (in Rosario do Catete, in the State of Sergipe), with Petrobras since 1992. In April 2012, Vale extended the concession for other 30 years. The following table sets forth information on Vale s production of potash:

Mine	Type	Fiscal year ending December 31 2013	2014	2015	Process Recovery in 2015 (%)
		(Thousands of metric tons)			
Taquari-Vassouras	Underground	492	492	481	82.9

4.3 Clients and sales

All potash sales from the Taquari-Vassouras mine are to the Brazilian market. In 2015, Vale sales represented close to 5% of total potash delivered in Brazil. Vale has a presence and long-standing relationships with the major players in Brazil, with more than 50% in 2015 of the sales allocated to four traditional clients.

Vale s phosphate products (MAP, TSP, SSP) are sold mainly to the fertilizer industry. In 2015, Vale sales represented near 31% of the total phosphate delivered in Brazil. In the high concentration segment, Vale s production represented 86% of the total production in Brazil in 2015. In the low phosphate concentration nutrients segment, Vale s production represented near 38% of total consumption in Brazil with products like SSP in 2015.

Vale s nitrogen segment produces 100% of the ammonia nitrate produced in Brazil. In addition, Vale is a global leading supplier of explosive ammonia nitrate in the Brazilian market.

4.4. Competition

The industry is divided into three major groups of nutrients: potash, phosphate and nitrogen. There are limited resources of potash around the world with Canada, Russia and Belarus being the main suppliers, each one with a small number of producers. The industry presents a high level of investment and requires long time for a project to mature. In addition, the potash segment is highly concentrated, with five major producers holding over 69% of the total global production capacity.

Phosphate rock is more accessible, but major exporters are located in Morocco, Algeria, Jordan, Egypt, and Peru. The five major producers of phosphate rock (China, Morocco, United States, Russia, and Jordan) hold 78% of global production in 2015, of which around 10% is exported.

However, products with greater added value, such as MAP and DAP are usually marketed instead of phosphate rock, due to cost-benefit relationship.

Table of Contents

Brazil is one of the largest agribusiness markets in the world due to its high production, exportation and consumption of grains and biofuel. It is the fourth-largest consumer of fertilizers in the world and one of the largest importers of phosphates, potash, and nitrogen. Brazil imports 95% of its consumed potash, which corresponded approximately to 5.1 Mtpa of K2O (potassium oxide) in 2015, 8% less than in 2014, from Canadian, Belarussian, Russian, German, and Israeli producers, in descending order. In terms of global potash consumption, China, the United States, Brazil, and India represented approximately 58% in 2015, where Brazil was responsible for 14% of this total global consumption. Vale s operations and fertilizer projects are highly competitive in terms of cost and logistics to meet the demand in the Brazilian market.

Most phosphate rock concentrate is consumed locally by downstream integrated producers, in the phosphate chain, with the seaborne market correspond in 2015 to 14% of total phosphate rock production. Major phosphate rock exporters are concentrated in Northern Africa, mainly through State-owned companies, with the Moroccan OCP Group, holding in 2015 29% of the total seaborne market. The phosphate rock seaborne trade supplies non-integrated producers of phosphate fertilizers such as SSP, TSP and MAP. Brazil imports 54% of the total phosphate needed, approximately 2.6 Mtpa of P2O5 equivalent (phosphate pentoxide) in 2015, 17% less than in 2014, and the main producers are Morocco, Russia, United States, and China, in descending order. Vale s phosphate operations are highly competitive in terms of cost and logistics to supply the Brazilian market.

Table of Contents

Nitrogen-based fertilizers are basically derived from ammonia (NH3), which, in turn, is produced from the nitrogen that is present in the air and in natural gas, making it a nutrient with high level of energy. Ammonia is the main component of nitrogen-based fertilizers, as well as ammonia nitrate and urea. The production of nitrogen-based fertilizers presents a regional profile due to the high cost associated with transportation and storage of ammonia, which requires refrigerated and pressurized facilities. Consequently, in 2015, only 10% of ammonia produced in the world is traded in global markets. Asia receives the largest volume of imports, with 34% of the global market. Major exporting countries are Russia, Trinidad y Tobago, and Canada. Nitrogen operations are highly competitive in terms of cost and logistics to supply the Brazilian market.

5. Infrastructure

5.1. Logistics Services

Vale has developed its logistics business based on the transportation needs of its mining operations, while Vale also provides transportation services for other customers.

Vale conducts its logistics businesses at the parent-company level, through subsidiaries, affiliates, and joint ventures, as set forth in the following table.

			Our participation		
			Voting	Total	
Company	**Business**	**Location**	**(%)**		**Partners**
Vale	Railroad (EFVM and EFC), port, and maritime operations	Brazil			
VLI (1)	Port, maritime and railroad operations in land terminals. Holding general cargo assets.	Brazil	37,6	37,6	FI-FGTS, Mitsui and Brookfield
MRS	Railroad operations	Brazil	47.1	48.2	CSN, Usiminas Participações e Logísticas and Gerdau
CPBS	Port, maritime and railroad operations	Brazil	100.0	100.0	
PTVI PTV	Port, maritime and railroad operations	Indonesia	59.3	59.3	Sumitomo, public investors
Vale Logística Argentina	Maritime operations.	Argentina	100.0	100.0	

Table of Contents

Company	Business	Location	Our participation Voting (%)	Our participation Total (%)	Partners
CEAR(2) (4)	Railroad.	Malawi	43.4	43.4	Mozambique, P.E. ports and railroads
CDN(3) (4)	Maritime and railroad operations.	Mozambique	43.4	43.4	Mozambique, P.E. ports and railroads
CLIN	Maritime and railroad operations	Mozambique	80.0	80.0	Mozambique, P.E. ports and railroads
Vale Logistics Limited	Railroad operations.	Malawi	100.0	100.0	
Transbarge Navigación	River system in Paraguai and Paraná rivers (Comboios).	Paraguay	100.0	100.0	
VNC	Port and maritime terminal operations	New Caledonia	80,5	80,5	Sumic, SPMSC
VMM	Port and maritime terminal operations	Malaysia	100,0	100,0	
Vale Newfoundland & Labrador Limited	Port operations	Voisey s Bay and Long Harbour, in Newfoundland and Labrador	100	100	
Vale Oman Distribution Center LLC	Port and maritime terminals operations	Oman	100	100	

BNDES holds debentures issued by Vale, exchangeable in part to Vale s share in VLI. If BNDES exercises its right on these debentures, Vale s share in VLI will be reduced by 8%

Vale holds control of its participation in CEAR through 85% interest in SDCN, holding 51% of CEAR.

Vale holds control of its participation in CDN through 85% interest in SDCN, holding 51% of CDN.

Upon conclusion of transactions with Mitsui, Vale held 21.7% of the voting capital of CEAR, 21.7% of the voting capital of CDN, 40% of the voting capital of CLN, and 50% of the voting capital of VLL.

(5) Upon conclusion of the sale of its share in Sumic of 10.5% in VNC for Vale in March 2016, Vale will hold 95% of VNC shares.

Table of Contents

5.1.1. Railroads

Brazil

Vitória a Minas railroad (EFVM). The EFVM railroad links Vale s Southeastern System mines in the Iron Quadrangle region in the State of Minas Gerais to the Tubarão Port, in Vitória, in the State of Espírito Santo. Vale operates this 905 km railroad under a 30-year renewable concession, which expires in 2027. The EFVM railroad consists of two lines of track extending for a distance of 601 km to permit continuous railroad travel in opposite directions, and single-track branches of 304 km. Industries are located in this area and major agricultural regions are also accessible to it. VLI holds rights to use the railroad transportation capacity at Vale s EFVM line. In 2015, EFVM carried daily an average of 341,6 metric tons of iron ore, or a total of 80.2 billion ntk of iron ore and other cargo. The EFVM railroad also carried 967 thousand passengers in 2015. On December 31, 2015, Vale had a fleet of 333 locomotives and 15,263 wagons at EFVM.

Carajás railroad (EFC). The EFC railroad connects Vale s mines in the Northern System in the Carajás region in the State of Pará to the maritime terminal Ponta da Madeira, in São Luís, in the State of Maranhão. Vale operates the EFC railroad under a 30-year renewable concession, which expires in 2027. EFC extends for 892 km from mines in Carajás to the Ponta da Madeira maritime terminal located near the Itaqui Port. Its main cargo is iron ore, principally carried mainly for the Company. VLI holds rights to use the railroad transportation capacity at Vale s EFC line. In 2014, EFC carried daily an average of 319,0 metric tons of iron ore. In 2015, the EFC railroad carried a total of 120.3 billion ntk of iron ore and other cargo. EFC also carried 301 thousand passengers in 2015. EFC supports the largest capacity train in Latin America, which measures 3.5 km, weighs 42,01 gross metric tons when loaded and has 330 cars. In 2015, EFC had a fleet of 284 locomotives and 17,125 wagons.

The principal items of cargo of the EFVM and EFC railroads are:

Iron ore, iron ore pellets, and manganese ore, carried for the Company and its customers;

Steel, coal, pig iron, limestone and other raw materials carried for customers with steel mills located along the railroad;

Agricultural products, such as grains, soybean meal and fertilizers; and

Other general cargo, such as pulp, fuel and chemical products.

Vale charges market prices for customer freight, including iron ore pellets originating from joint ventures and other enterprises in which Vale does not have 100% equity interest. Fees vary based on the distance traveled, the type of product transported and the weight of the freight in question, and are regulated by the Brazilian transportation regulatory agency, the Agência Nacional de Transportes Terrestres (ANTT).

199

Table of Contents

VLI provides logistic integrated solutions through 7,920 km of railroads in Brazil (Centro-Atlântica Railway and Norte-Sul Railway), eight land terminals with total capacity of storage of 730,000 tons and three maritime terminals and port operations. Vale holds 37.6% interest in VLI and is party in a shareholders agreement with FI-FGTS, Mitsui, and Brookfield, which hold the remaining shares of VLI.

Main assets owned by VLI are:

Centro-Atlântica Railway. Central-east regional railway network of the Brazilian national railway system under a 30-year renewable concession, which expires in 2026. The central east network has 7,220 km extending into the States of Sergipe, Bahia, Espírito Santo, Minas Gerais, Rio de Janeiro, Goiás and the Federal District.

Norte-Sul Railway. A 30-year renewable sub concession for commercial operation of a 720 km stretch of the North-South railroad, in Brazil, between the cities of Acailandia, in the State of Maranhão, and Porto Nacional, State of Tocantins. This railroad is connected to EFC, creating a new corridor for the transportation of general cargo, mainly for the export of soybeans, rice and corn produced in the center-northern region of Brazil.

The right to use the carrying capacity in Vale railroads, EFVM and EFC for general cargo; and

The right to use the carrying capacity in Vale terminals, Tubarão and Praia Mole for general cargo.

In 2015, VLI carried a total of 34.8 billion tku load, including 21.3 billion tku of Centro-Atlântica Railway and Norte-Sul Railway and 13.5 billion tku through Vale s operational agreements.

Additionally, Vale holds direct and indirect interest in MRS Logística S.A. (MRS), company that holds the concession to operate the railroad connecting the States of Rio de Janeiro, São Paulo and Minas Gerais, which is 1,643 km-long. In 2015, the MRS railroad carried a total of 167 million metric tons of cargo, including 80.7 million metric tons of iron ore and other cargo from Vale.

Africa

The Nacala logistic corridor, currently in the ramp up phase, connects the Moatize mine to the Nacala-à-Velha maritime terminal, located in Nacala, Mozambique, crossing the Republic of Malawi. The Nacala corridor is a railroad and a port infrastructure, including greenfield areas and remodeling railroads existing in Mozambique and Malawi and a new maritime terminal for coal in Mozambique. The Nacala Corridor will allow the Moatize mine expansion and will offer support to Vale s operations in the Southern Africa. In Mozambique, Vale operates under two concession agreements, one related to the new Mozambican railroad and the other related to the recently-built coal port, both maintained by Vale s subsidiary Corredor Logístico Integrado de Nacala S.A. (CLN), which mature in 2042, subject to extensions. In addition, Vale is

refurbishing existing railroads under the concession granted by Vale s subsidiary Corredor de Desenvolvimento do Norte S.A. (CDN), which matures in 2035. In Malawi, Vale operates under the concession held by its subsidiary Vale Logistics Limited (VLL), which matures in 2044, subject to extensions. Vale is rehabilitating existing railroads under the concession held by its subsidiary Central East African Railway Company Limited (CEAR), which was extended to 2013, with automatic renewal for a 30-year period starting from the beginning of railroad services under greenfield concession of VLL railroad.

Table of Contents

In December 2014, Vale entered into an investment agreement under which Mitsui acquired Vale s share in the Nacala Corridor. Vale s indirect interest in CLN, CDN, VLL and CEAR will be transferred to a controlling company jointly held (50% each) and controlled by Vale and Mitsui. Mitsui will invest US$ 313 million on this controlling company, in equity and quasi-equity instruments. Vale and Mitsui are looking for project funding to replace part of the funds application provided by Vale. The transaction is subject to certain conditions precedent and the closure is expected to 2016.

5.1.2. Ports and maritime terminals

Brasil

Vale operates a port and maritime terminals principally as means to conclude the delivery of its iron ore and pellets to bulk carrier vessels serving the seaborne market. For more information, see item 1.1 Iron Ore and Pellets in this section of the Reference Form. Vale also uses its port and terminals to handle customers cargo.

Tubarão Termina. The Tubarão Terminal, which covers an area of approximately 18 square kilometers, is located in the city of Vitória, in the State of Espírito Santo, and contains: the iron ore maritime terminal and general cargo terminals (the Terminal de Granéis Líquidos and the Terminal de Produtos Diversos).

The Iron Ore Maritime Terminal has two piers. Pier I can maintain two anchored vessels at a time, one of up to 170,000 DWT on the southern side and one of up to 210,000 DWT on the northern side. Pier II can accommodate one vessel of up to 405,000 DWT at a time, limited at 23 meters draft plus tide. In Pier I, there are two ship loaders, which can load up to a combined total of 13,500 metric tons per hour each. In Pier II there are two ship loaders that could work alternately and can each load up to 16,000 metric tons per hour continuously. In 2015, Vale shipped 105.4 million metric tons of iron ore and pellets through the terminal. The iron ore maritime terminal has a storage yard capacity of 3.4 million metric tons.

Terminal de Produtos Diversos handled 8.1 million metric tons of grains and fertilizers in 2015. VLI is entitled to use the capacity of the Terminal de Produtos Diversos.

Terminal de Granéis Líquidos handled 614.6 thousand metric tons of fuel in 2015. VLI is entitled to use the capacity of the Terminal de Granéis Líquidos.

Terminal de Praia Mole. This is basically a coal terminal and held 12,3 million metric tons of coal in 2015. VLI is entitled to use the capacity of the Terminal de Praia Mole.

Terminal Marítimo de Ponta da Madeira. The Terminal Marítimo de Ponta da Madeira is located in the city of São Luís, State of Maranhão. Pier I can accommodate vessels displacing up to 420,000 DWT and has a maximum loading rate of 16,000 tons per hour. Pier III, with two berths and three ship loaders, can accommodate vessels of up to 200,000 DWT on the south berth and 180,000 DWT on the north berth or two 180,000 DWT ships simultaneously), depending on tide conditions, with maximum loading rate of 8,000 metric tons per hour in each. Pier IV (south berth) can accommodate vessels displacing up to 420,000 DWT and two ship loaders operating alternately with maximum loading rate of 16,000 tons per hour. Cargo shipped through Vale s Ponta da Madeira maritime terminal consists of its own iron ore production and manganese. In 2015, 124.7 million metric tons of iron were handled through the terminal. The Ponta da Madeira maritime terminal has a storage yard with

Table of Contents

capacity of 8.9 million metric tons, to be expanded to 10.7 million metric tons. VLI currently stores and operates with fertilizers, grains, pig iron and manganese ore, which are shipped through the Port of Itaqui.

Table of Contents

Terminal Marítimo de Itaguaí Cia. Portuária Baía de Sepetiba (CPBS). CPBS is a wholly owned subsidiary that operates the Itaguaí terminal, in the Port of Itaguaí, in Sepetiba, State of Rio de Janeiro, leased from Companhia Docas do Rio de Janeiro. Itaguaí s maritime terminal has docks that allow the loading of ships up to 17.8 meters of draft and up to 200,000 DWT. In 2015, the terminal loaded approximately 22.0 million metric tons of iron ore.

Terminal Marítimo de Ilha Guaíba. Vale operates a maritime terminal on Guaíba Island in the Sepetiba Bay, in the State of Rio de Janeiro. The iron ore terminal has a pier (with two branches) that allows the loading of ships of up to 350,000 DWT. In 2015, the terminal loaded approximately 47.3 million metric tons of iron ore.

VLI also operates the Terminal Marítimo Inácio Barbosa (TMIB ., owned by Petrobras, in the State of Sergipe; the Maritime Terminal TIPLAM, in the State of São Paulo, owned jointly by VLI and Vale Fertilizantes; and Pier II in the port of Itaqui, that can receive vessels of up to 155,000 DWT with load rate of a maximum of 8,000 tons per hour.

Argentina

Vale Logistica Argentina S.A. (Vale Logistica Argentina) operates a terminal at the San Nicolas port located in the province of Buenos Aires, Argentina, where it has been authorized to use a 20,000 square meters storage yard until October 2016 and has executed an agreement with unrelated parties to an additional 15,000 square meters storage yard. Vale handled 2.7 million metric tons of iron ore and manganese through this port in 2015, from Corumbá, Brazil, and carried through the Paraná and Paraguay rivers to be transported to Brazilian, Asian and European markets. The loading rate at this port is 24,000 tons per day and unloading rate of 13,200 tons per day.

Canada

Vale Newfoundland and Labrador Limited operates a port as part of its mining operations in Voisey s Bay, Labrador, and a port as part of its processing operations in Long Harbour, Newfoundland. The port in Voisey s Bay is used to ship nickel and copper and to refilling. The port in Long Harbour is used to receive nickel concentrate from Voisey s Bay with goods and materials required to operate Long Harbour.

Oman

Vale Oman Distribution Center LLC operates a distribution center in Liwa, Oman. The maritime terminal has a large deep water pier, a 600-m long platform connected to the beach by a 700-m long bridge, which is integrated to a storage Yard with movement and processing capacity of 40 Mtpa of iron ore and pellets per year. The nominal loading capacity of this port is 10,000 tons/hour and nominal unloading of 9,000 tons/hour.

203

Table of Contents

Indonesia

PTVI owns and operates two ports in Indonesia to support its nickel mining activities.

The Balantang Special Port is located in Balantang Village, in the South Sulawesi, and has two types of piers with total capacity of 10,000 DWT: two resources for barges of up to 4,000 DWT each for bulk dry volume and a dock for general cargo of up to 2,000 DWT.

The Harapan Tanjung Mangkasa Special Port is located in Lampia Village, in the South Sulawesi, with armoring buoys that can accommodate vessels displacing up to 20,000 DWT, and a terminal that can accommodate fuel tankers with displacing up to 2,000 DWT, with total capacity of 22,000 DWT. Recently the 2,000 terminal was expanded to increase the capacity in 5,000 DWT, and it is expected to be in use in June 2016. By July 2016, Tanjung Mangkasa should have total capacity of 25,000 DWT.

New Caledonia

Vale has and operates a port in Prony Bay, South Province, New Caledonia. This port has three terminals, including a passenger boat terminal for two vessels of up to 50 meters, a dock for dry bulk material for vessels of up to 55,000 DWT to unload at 8,000 tons a day and a general cargo dock for vessels of up to 215 meters. The general cargo dock can receive containers at 10 units per hour, liquid fuels (GLP, BPF, Diesel) at 350 cubic meters per hour, and break-bulk. The containers patio, a covered area of about 13,000 square meters, can receive up to 1,000 units. A bulk storage patio is linked to the port by a belt with storage capacity of 94,000 tons of limestone, 95,000 tons of sulfur and 60,000 tons of coal.

Malaysia

The Maritime Terminal Teluk Rubiah (TRMT) is located in the State of Perak, Malaysia, and has one dock and two moors that allow unloading vessels with approximate capacity of 400,000 DWT and loading ships with capacity of up to 220,000 DWT. In 2015, the terminal unloaded 15.2 million metric tons of iron ore and loaded 14.2 million metric tons of iron ore.

5.1.3. Navigation

Vale continued to develop and operate a low cost fleet of vessels, comprised of company-owned vessels and freight vessels through mid and long-term lease agreements, to carry its cargo from Brazil to its markets. Vale has 18 vessels in operation, including seven Valemax vessels, with capacity of 400,000 DWT, and other 9 capesize vessels, with capacities varying between 150,000 to 250,000 DWT. Vale also operates 27 Valemax vessels under long-term agreements. To support its strategy to deliver iron ore, Vale holds and operates 2 floating transfer stations in the Subic Bay, in the Philippines, that transfers iron ore from Valemax vessels to smaller vessels that deliver the cargo to its destination. With

this service, the Company expects to improve its ability to offer iron ore products to the Asian market at competitive prices. In 2015, Vale carried approximately 188 million metric tons of iron ore and pellets on CFR and Cost, Insurance, and Freight (CIF) basis.

Table of Contents

In 2014 and 2015, Vale entered into cooperation agreements for the transportation of iron ore with carriers and financial institutions, located in China and in Hong Kong. Under these agreements, Vale (i) sold 12 of its 400,000 Valemax vessels for an aggregate value of US$ 1,316 billion in December 2015, and (ii) negotiated long-term chartering agreements with Chinese shipbuilders to guarantee long-term loading capacity to transport iron ore from Brazil to Asia and protect Vale against the volatility of freight costs. In addition, Vale sold three ore carrying ships for approximately US$ 23 million in 2015.

Table of Contents

On the Paraná and Paraguay fluvial system, Vale carried iron ore and manganese through its subsidiary, Transbarge Navigacion, which transported by rivers 3.86 million tons in 2015 and (ii) other chartered vessels. Barges are unloaded at the terminals of Vale local clients at contracted terminals in Argentina or at the facilities of its subsidiary, Vale Logistica Argentina, which carries ore in ocean vessels. Vale Logística Argentina carried 2.1 million tons of ore (out of a total capacity of 3 million tons) though the port of Saint Nicolas in seaborne vessels in 2015.

Vale manages a fleet with 25 tugboats, owning 25 vessels. Vale directly operates nine tugboats in the ports of Vitória and Mangaratiba, in the States of Espírito Santo and Rio de Janeiro, respectively. Four tugboats in the port of São Luis and Aracaju, in the States of Maranhão and Sergipe, respectively, are operated by consortium companies, in which Vale holds 50% interest. Other ten tugboats are freighted to and operated by third parties, under their responsibility, in other ports in Brazil.

5.1.4. Energy

Vale manages its power generation portfolio based on the current and projected energy needs of its operations, with the goal of reducing energy costs and minimizing the risk of energy shortages.

Brazil

Energy management and efficient supply in Brazil are priorities for Vale, given the uncertainties associated with changes in the regulatory environment, and the risk of rising prices. In 2015, Vale s total installed energy capacity in Brazil was 1.2 GW. Vale uses the electricity produced by these plants for its internal consumption needs. Vale currently has direct interest in three hydroelectric power plants and four small-sized hydroelectric plants in operation. The hydroelectric power plant Candonga in located in the Southeast, Machadinho is located in the South, Estreito is located in the North. The small-sized hydroelectric power plants Ituerê, Melo, Glória and Nova Maurício are located in the Southeast. Vale also has indirect interest in the hydroelectric power plants of Igarapava, Porto Estrela, Funil, Candonga, Aimorés, Capim Branco I, and Capim Branco II, through its 55% share in Aliança Geração. These hydroelectric power plants are located in the Southeast and part of the power generated is directed to Vale operations under a power purchase contract with Aliança Geração.

By means of Vale s subsidiary Aliança Norte Energia Participações S.A., Vale indirectly holds 4.59% of the stocks in Norte Energia S.A. (NESA), a company incorporated with the sole purpose of deploying and operating the Belo Monte Hydroelectric Plant, in the State of Pará, which shall start operations in the first quarter in 2016. Vale s interest in the Belo Monte project grants it the right to acquire 9% of the power generated by the plant, under a long term power purchase agreement, signed in 2012. For more information on this operation, see item 15.7 in this Reference Form.

Vale also produces, through its subsidiary Biopalma da Amazônia S.A. (Biopalma), palm oil in the State of Pará, with the main purpose of producing biodiesel, in the future, through an extraction plant to be installed by Biopalma. Biodiesel will be mixed with regular diesel to produce a fuel known as B20 (with 20% biodiesel), to be used in Vale s fleet of locomotives, trucks, and heavy machinery used in operations of the North System.

206

Table of Contents

Canada

In 2015, Vale s hydroelectric power plants in Sudbury generated 17% of the electricity requirements of Vale s operations in Sudbury. The power plants consist of five separate generation stations with an installed capacity of 56 MW. The output of the plants is limited by water availability, and by restrictions imposed by a water management plan regulated by the Government of the Province of Ontario. In 2015, the average requirements for power was 195 MW to all surface plants and mines in the Sudbury area.

In 2015, diesel generation provided 100% of the electric requirements of Vale s operations in Voisey s Bay. Vale has six diesel generators on-site, with capacity varying from 12 MW to 14 MW, for purposes of meeting seasonal demands.

Indonesia

Energy costs are a significant component of Vale s nickel production costs for the processing of saprolitic lateritic ores at PTVI operations in Indonesia. A great portion of the PTVI s electric furnace power requirements are supplied at low-cost by its three hydroelectric power plants located in the Larona River: (i) the Larona plant with average generation capacity of 165 MW, (ii) the Balambano plant with average generation capacity of 110 MW; and (iii) the Karebbe plant with average generation capacity of 90 MW. These plants help reducing the costs by replacing the diesel used in power generation for hydroelectric power, reducing CO2 emissions, replacing non-renewable power generation, which allow Vale to increase current nickel production capacity in Indonesia.

6. Other Investments

Vale holds 25% in iron ore pelleting plants in China: Zhuhai YPM and Anyang. The remaining shares of Zhuhai YPM are held by Zhuhai Yueyufeng Iron and Steel Co. Ltd. and Halswell Enterprises Limited, while the remaining shares of Anyang are held by Anyang Iron & Steel Co., Ltd.

Vale holds 25% interest in coal operations in China, in Longyu (Henan Province). Longyu produces metallurgic and thermal coal and other related products, and the remaining capital is held by Yongmei Group Co., Ltd. (formerly known as Yongcheng Coal & Electricity (Group) Co. Ltd.), Shanghai Baosteel International Economic & Trading Co., Ltd. and other minor shareholders. Vale also held a 25% share in Shandong Yankuang International Coking Company Limited (Yankuang), Chinese joint-venture that produces metallurgic coal coke, methanol, tar oil, and benzene, and the remaining shares are held by Yankuang Group Co. Ltd. and Itochu Corporation. However, on December 15, 2014, Vale executed an agreement with Itochu Corporation to sell its share in Yankuang to the Yankuang Group for the total amount of US$1.00 (one real). This sale was approved by the Chinese government on March 30, 2015 in order to have Vale and Itochu Corporation out of said joint venture, and the sale of the interest held by Vale and by Itochu Corporation in Yankuang to the Yankuang Group was considered concluded on this date.

Vale holds indirect interest of 25% in Korea Nickel Corporation, which operates a nickel refinery in South Korea. The remaining shares are held by Korea Zinc Co., Ltd., Posteel Co., Ltd., Young Poong Co., Ltd., Pohang Technology College and other individual investors. Korea Nickel

Corporation produces end nickel for the stainless steel industry using intermediate products from Vale operations in Matsuzaka and New Caledonia.

Table of Contents

Vale owns 50.0% of capital stock of California Steel Industries, Inc. (CSI), a producer of flat rolled steel and pipes, located in California, in the United States. The remaining 50% belongs to JFE Steel. CSI s annual production capacity is of about 2.8 million metric tons of flat products and pipes. Additionally, Vale holds a 26.9% stake in ThyssenKrupp Companhia Siderúrgica do Atlântico (TKCSA), an integrated producer of steel plates located in the State of Rio de Janeiro. The plant was commissioned in 2010, and produced 4.0 Mt in 2015. The final production capacity of TKSCA is 5.0 Mtpa of plates and will require 8.5 million metric tons per year of iron ore and pellets, while working in full capacity, supplied exclusively by Vale.

Vale is also engaged in two other steel projects in Brazil: Companhia Siderúrgica do Pecém (CSP), which is being constructed, and Aços Laminados do Pará (Alpa), which is under analysis considering discussions with the Brazilian government.

Additionally, Vale holds minor interest in two bauxite mining companies, both in Brazil: Mineração Rio do Norte S.A. (MRN) and Mineração Paragominas S.A. (Paragominas), and Vale has agreed upon transferring Vale s interests in Paragominas to Norsk Hydro ASA (Hydro). In 2014, Vale sold part of its interest in Paragominas to Hydro and expects to conclude the sale of its indirect 13.63% share to Hydro in 2016.

Vale has agreed upon selling its hydrocarbon on-shore exploration license in Peru, subject to regulatory approvals. Vale also holds licenses for off-shore exploration in Brazil, which are abandoned, subject to regulatory approvals.

e. Key consumables and raw materials:

i. Description of the relationships with suppliers, including whether they are subject to governmental control or regulation, identifying the institutions and applicable legislation

Vale is committed to build a sustainable business model and contribute to a just, environmentally balanced and economically prosperous society. Vale adopts the strategy in relation to its suppliers to maintain a long-term relationship in order to promote partnerships aimed at gains for both parties, through continuous innovation and development and supply of goods and quality services at a compatible cost.

In order to achieve continuous improvement and contribute to advances in the production chain, the management of relationships with its suppliers comprises the following steps:

Certification and registration of suppliers based on Vale s values, taking into account also the identification and analysis of supply risks (environmental, institutional, labor, social security, financial, health and safety, ethics, and social responsibility);

Third party Due Diligence aiming to mitigate reputation risks, arising out of eventual engagement by Vale s commercial partners with events that violate human rights or anticorruption laws applicable to Vale, as the Foreign Corrupt Practices Act FCPA and the UK Bribery Act and the

Brazilian law against corruption (Federal Law no. 12.846, dated August 1, 2013);

Monitoring the financial health of Vale s main suppliers of material, equipment, and services;

Table of Contents

Periodic performance evaluations to ensure compliance with applicable requirements and as defined in the contracting stage, as well as adherence to agreement expectations;

Development and support in suppliers training; and

Promotion and prospection of new suppliers.

Under the UN s Universal Declaration of Human Rights, Vale respects and promotes human rights in its activities, through its production chain and in regions where the Company operates.

In this sense, Vale aims to establish commercial relationships with suppliers who share its principles and values and who respect human rights.

Vale s principles and values are disclosed to its suppliers in its Supplier s Code of Ethics and Conduct, document signed by all the companies that have entered into a supply agreement with Vale. Note that this Code is available at the Company website (www.vale.com).

The suppliers agreements are preceded by a search in the list disclosed at the website of the Ministry of Labor and Employment (MTE) that includes individuals or legal entities found to be engaged in employing workers under slave work or analogous conditions and the list CEIS (National Registry of Suspected Companies) that lists companies with no good standing and suspended by the federal government. Other searches to public sanction lists may apply under specific circumstances.

The guidelines and criteria Vale adopts to evaluate its suppliers are based on the above mentioned environmental legal requirements applicable to suppliers whose operational processes involve the use of natural resources or are potentially polluting or likely to cause environmental degradation. In addition to these legal aspects, Vale s Environmental Management criteria and the principles of its Sustainable Development Policy are considered.

With regard to recipients of waste generated in Vale s production processes, they all are subject to audit by the Department of the Environment and Sustainable Development during their initial approval and periodic revalidation.

The main environmental laws applicable to this process are:

a) Environmental Permit

- Federal Law 6938/81 - National Environmental Policy

- CONAMA Resolution (National Council for the Environment) 237/97

- Complementary Law 140/11

- CONAMA Resolution (National Council for the Environment) 01/86.

- Federal Law 10165/00

- Federal Law 12651/12

- IBAMA (Brazilian Institute of Renewable Natural Resources) Normative Instructions 96/06 and 97/06.

Table of Contents

b) Pesticides

- Federal Law 7802/99
- Federal Decree 4047/02
- Law 6360/76 - ANVISA - National Agency for Sanitary Surveillance

c) Transportation of Dangerous Goods

- Decree 96044/88
- ANTT Resolution (National Ground Transportation Agency) 420/02

d) Radioactive Material

- CNEN Resolution (National Nuclear Energy Council) NE 2.01
- CNEN Resolution (National Nuclear Energy Council) NE 5.02

e) Explosive Materials

- Federal Decree 3665/00

f) Controlled Chemicals

• Ministry of Justice Decree 1274/2003.

ii. Potential dependence on few suppliers

The main consumables purchased by Vale in 2015 were: liquid and solid fuels, tires, parts and components of mining equipment, railroad equipment. Moreover, the main rendering of services included equipment installation and assembly, installation repair maintenance and operational services, in project management.

In 2015, the main categories of equipment purchased by the procurement division were comminution equipment and wagons. Vale s largest group of suppliers of these types of equipment are Sandvik and Qiqihar Railway Rolling Stock, accounting jointly for 3.2% of total purchases of Supplies in the period.

Fuel consumption is quite intense, especially in operations and transport of iron ore. Vale s main supplier of this consumable item is Petrobras Distribuidora, which accounted for approximately 80% of Vale s purchase of fuels in 2015.

In 2015, Vale used 59% of the electricity provided by self-production in Brazil and the remaining portion was consumed through purchase of power in the market, which main suppliers were Cemig, Eletronorte, and Enertrade.

Table of Contents

The 10 largest input, equipment and service providers represented 22% of the total purchases by December 31, 2015.

iii. Possible volatility in their prices

Vale has some contracts where prices are pegged to market indexes (parametric formulas) and therefore subject to these volatilities. Prices can also vary in relation to historical prices depending on offer versus demand in the market at the time of competition. For information related to eventual volatility in Vale s product prices, see item 4.2 in this Reference Form.

7.1 Description of main activities engaged by the issuer and its subsidiaries

Vale is one of the largest mining companies in the world by market value. Vale is the largest iron ore and iron ore pellets producer and the largest nickel producer in the world. Vale also produces manganese ore, ferroalloys, copper, thermal and metallurgical coal, phosphates, potash, cobalt, and platinum group metals (PGMs), gold and silver and other fertilizers. Vale is engaged in mineral exploration in 6 countries in the world. Vale operates large logistics systems in Brazil and in other areas of the world integrated with its mining operations, including railroads, maritime terminals and ports. In addition, Vale has a portfolio of maritime freight, floating transfer stations and distribution centers to support distribution of iron ore worldwide. Vale also has investments in the sectors of energy and steel, directly or through subsidiaries and joint ventures.

The corporate purpose of the Company is (i) realize the enjoinment of mineral reservoirs in national territory and abroad though research, exploration, extraction, processing, industrialization, transportation, shipment, and sale of minerals; (ii) build railroads, operate and explore railroad traffic of its own and of third parties, (iii) build and operate maritime terminals, owned or third parties , as well as explore navigation and

port support activities; (iv) provide load transportation integrated logistics services, including receipt, storage, transportation, distribution and delivery within the context of a multimode transportation system; (v) produce, process, carry, industrialize and sell each and every source and form of power, being entitled to act in the production, generation, transmission, distribution, and sale of its products, byproducts and sub products; and (vi) engage, in Brazil and abroad, in other activities that may be directly or indirectly of in the interest of the company to perform its corporate purpose, including research, industrialization, sale and purchase, importing and exporting, as well as exploration, industrialization and sale of forest resources and provision of services of any nature; and (vii) incorporate or participate, under any model, of other companies, consortiums, entities which corporate purpose is directly or indirectly linked, assisting or instrumental to its corporate purpose.

For information about the Company, see item 6.3 in this Reference Form.

For information about activities developed by the Company and its subsidiaries in its markets, see items 7.2 and 7.3 below.

Table of Contents

7.2 Information on operational segments

a. Products and services marketed in each operating segment

(i) Ferrous Materials Includes extraction of iron ore and production of pellets, as well as the North, Southern and Southeastern transportation systems, including railroads, ports, maritime terminals, and ships linked to these operations. Exploration of manganese ore and the production of ferroalloys are also included in this segment.

- *Iron ore and iron ore pellets.* Vale operates four systems in Brazil for production and distribution of iron ore, which are known as Northern, Southeastern, Southern, and Center-Western systems. The North and Southeastern systems are fully integrated and are composed of mines, railroads, maritime terminals and a port. The Southern system is composed of three mining complexes and two maritime terminals. Vale also has iron ore pellets operations in different locations, some of them under *joint ventures*. Vale operates 11 pelleting plants in Brazil and two in Oman. Operations of three of its pelleting plants in Brazil have been suspended since the fourth quarter of 2012, in response to market conditions, and its capacity has been partially replaced by Tubarão VIII, a more effective plant. In addition, Vale holds a 50% share in Samarco, *joint venture* that operates an integrated system in the states of Minas Gerais and Espírito Santo, in Brazil. Samarco operations have been suspended following the breakage of the Fundão waste barrage in November 2015. Vale also holds a 25% interest in two pelleting companies in China. For information related to the breakage of the Samarco barrage, see items 4, 7.9, and 10.1 in this Reference Form.

- *Infrastructure logistics*: Vale is a leading operator in logistic services in Brazil and in other areas of the world, with railroads, maritime terminals, distribution centers, and ports. Two of four iron ore systems of Vale include a railroad integrated with a port and maritime terminals. Vale also holds interest in MRS Logística S.A. (MRS), company that carries Vale s iron ore products from the mines in the Southern System to its maritime terminals, and in VLI S.A. (VLI), company that offers integrated logistics solutions for general cargo using railroads and land and maritime terminals in Brazil. The logistic infrastructure to support Vale operations in the Southeast of Africa are currently in *ramp up*. Vale owns and charters vessels to carry bulk products, sold to clients on a cost and freight (CFR) basis.

- *Manganese ore and ferroalloys*. Vale conducts its manganese mining operations through the its *holding* (Vale S.A.) and subsidiaries in Brazil, and produces several manganese ferroalloys through a wholly-owned subsidiary in Brazil.

(ii) Coal extraction of coal and related logistic services. Vale conducts its coal operations primarily in Mozambique through Vale Moçambique S.A., where metallurgic and thermal coal operations are in *ramp up*. Vale also maintains coal

operations in Australia through Rio Doce Austrália Pty Ltd. (Vale Australia), where the Company produces metallurgic coal in *Carborough Downs*. Vale also holds minor interests in a Chinese coal and coking producer.

(iii) Base metals Includes the production of non-ferrous minerals, including production of nickel (co-products and by-products), copper and investments in aluminum partnerships.

- *Nickel*. Nickel mines and processing operations are conducted by Vale s wholly-owned subsidiary, Vale Canada Limited (Vale Canada), with operations in Canada and in Indonesia. Vale also maintains nickel operations in Onça Puma, in the state of Pará, in Brazil. The company also owns and operates, or holds interests in nickel refineries in the United Kingdom, Japan, Taiwan, China and South Korea. Vale is currently in *ramp up* of its nickel operations in New Caledonia;

- *Copper.* In Brazil, Vale produces copper concentrate in Sossego and Salobo, in Carajás, in the state of Pará. Vale is concluding the *ramp up* of operations in Salobo. In Canada, Vale produces copper concentrates, copper anodes, and copper cathodes associated to its nickel mining operations in *Sudbury* and *Voisey s Bay*. In Zambia, Vale s *joint venture* produces copper concentrates in Lubambe, in the copper belt in Zambia.

- *Cobalt, PGMs and other precious metals.* Vale produces cobalt as a sub product of its nickel mining and processing activities in Canada and refines most part of it at its facilities in *Port Colborne*, in the Ontario Province, Canada. Vale also produces cobalt as a sub product of its nickel operations in New Caledonia, which are currently in *ramp up*. Vale produces platinum group metals (PGMs) as sub product of its nickel operations and processing in Canada. PGMs are concentrated at the *Port Colborne* facilities and are refined in its precious metal refinery in Acton, England. Vale produces gold and silver as sub products of its nickel mining and processing operations in Canada, and gold is also a sub product of copper mining in Brazil.

(iv) Fertilizers Includes three important nutrient groups: potassium, phosphates and nitrogen. Vale conducts its potash operations in Rosário do Catete, in the state of Sergipe, Brazil. Main Vale s phosphate operations are conducted by its subsidiary Vale Fertilizantes S.A., which holds

Table of Contents

most of the fertilizing assets of Vale in Brazil. Vale Fertilizantes is the largest Brazilian producers of fertilizers from phosphate rocks and phosphates and the second largest Brazilian producer of nitrogen-based fertilizers. Vale also maintains operations at the phosphate rock mine in Peru.

(iv) Others Includes investments in joint ventures and affiliates in other businesses.

The information presented to upper management regarding performance of each segment are usually originated from accounting records maintained according to generally accepted accounting principles in Brazil, with some minimum relocations between segments.

Table of Contents

b. **Revenue from the segment and its participation in the Company s net revenues**

	2015		2014		2013	
In R$ thousands Segment	**Net Revenue**	**% of total**	**Net Revenue**	**% of total**	**Net Revenue**	**% of total**
Ferrous Materials	55,413,000.00	64.81	60,395,000.00	68.42	75,668,000.00	74.56
Coal	1,739,000.00	2.03	1,740,000.00	1.97	2,188,000.00	2.16
Base Metals	20,491,000.00	23.97	18,137,000.00	20.55	15,746,000.00	15.51
Fertilizers	7,442,000.00	8.70	5,656,000.00	6.41	6,038,000.00	5.95
Others	414,000.00	0.48	2,347,000.00	2.66	1,850,000.00	1.82
Total Revenue	**85,499,000.00**	**100**	**88,275,000.00**	**100.00**	**101,490,000.00**	**100.00**

c. **Profit or loss resulting from the segment and its participation in the Company s net income**

	2015		2014		2013	
In R$ thousands Segment	**Profit/Loss**	**% of total**	**Profit/Loss**	**% of total**	**Profit/Loss**	**% of total**
Ferrous Materials	(8,533,000.00)	19.30	1,109,000.00	116.25	7,588,000.00	6,593.04
Coal	(16,097,000.00)	36.41	(1,866,000.00)	(195.60)	(528,000.00)	(458.77)
Base Metals	(17,553,000.00)	39.70	4,793,000.00	502.41	(781,000.00)	(678.59)
Fertilizers	(707,000.00)	1.60	(2,206,000.00)	(231.24)	(6,088,000.00)	(5,289.73)
Others	(1,323,000.00)	2.99	(876,000.00)	(91.82)	(72,000.00)	(62.56)
Discontinued operations General load					(3,909.00)	(3.40)
Net Profit of the Period	**(44,213,000.00)**	100.00	**954,000.00**	**100.00**	**115,091.00**	**100.00**

7.3 **Information on products and services related to the operating segments**

a. Characteristics of the production process

b. Characteristics of the distribution process

c. Characteristics of the markets, in particular:

i. competition conditions in the markets

ii. participation in each market

d. Possible seasonality

e. Main input and raw material, including:

i. description of relations with suppliers, including if they are subject to control or regulation, indicating entities and applicable respective laws

ii. eventual dependent on small number of suppliers

iii. eventual price volatility

1. Ferrous materials

Vale s ferrous materials business includes iron ore prospecting, pellet production, manganese ore prospecting, and ferroalloy production. Each activity is described below.

1.1 Iron Ore and Iron Ore Pellets

1.1.1 Iron ore operations

Vale runs the majority of its iron ore operations in Brazil mainly through (a) Vale S.A., parent company, and (b) its wholly-owned subsidiary Mineração Corumbaiense Reunida S.A. (MCR) and (c) Vale s affiliate, Minerações Brasileiras Reunidas S.A. (MBR). Vale s mines, which are all open-pit and their operations are concentrated essentially in three systems: the Southeastern System, the Southern System and the Northern System, each with its own transportation capacity. Vale also has mining operations in the Central Western System and holds 50% interest in Samarco. Samarco operations have been suspended following the breakage of one of its waste Fundão barrages in the State of Minas Gerais in November 2015. All the iron ore operations of Vale in Brazil are held under concession by the federal government, which are granted for undetermined period.

Company/ Mining System	Location	Description / History	Mining	Operations	Power source	Access / Transportation
Vale Northern	Carajás, in the	Open-pit mines and	High-grade hematite ore	One-pit mining	Power	The iron ore is

Table of Contents

Company/ Mining System	Location	Description / History	Mining	Operations	Power source	Access / Transportation
System	State of Pará	ore processing plants. Divided into North Range, South Range, and East Range. Since 1985, Vale has been conducting mining activities in the Serra Norte, which is divided into three main mining bodies (N4W, N4E and N5) and two key processing plants. In 2014, Vale started a new mine and a new processing unit in Serra Leste. Vale expects its operations in Serra Sul, location of its S11D projects, to start in 2016.	(iron content over 66% on average).	operations. The processing consists simply of sizing operations, including screening, hydrocycloning, crushing and filtration. The processing produces sinter feed, pellet feed, and granulated ore.	provided by the national power network, produced directly by Vale or acquired under power purchase contracts.	transported by the Carajás Railroad (EFC) to the Ponta da Madeira maritime terminal in the State of Maranhão. Iron ore from Serra Leste is carried by trucks from the mine to the EFC railroad.
Southeastern System	Iron Quadrangle region of the State of Minas Gerais	Three mining complexes: Itabira (two mines, with three important processing plants), Minas Centrais (three mines, with three important processing plants and one secondary plant) and Mariana (three mines and two processing plants).	The ore reserves have high ratios of itabirite ore relative to hematite ore. Itabirite ore has iron grade between 35% and 60% and requires concentration to achieve shipping grade.	Open-pit mining operations. Vale generally processes the run-of-mine (ROM) by means of standard crushing, followed by classification and concentration steps, producing sinter feed, lump ore and pellet feed in the processing plants located at the mining complexes.	Power provided by the national power network, produced directly by Vale or acquired under power purchase contracts	The Vitória a Minas Railroad (EFVM) connects these mines to the Tubarão port.
Southern System	Iron Quadrangle region of the	Three mining complexes:	The ore reserves have high ratios	Open-pit mining operations. Vale	Power provided by the national	MRS transports Vale s core

	State of Minas Gerais	Minas Itabirito (four mines, and three major processing plants); Vargem Grande (three mines and two major processing plants); and Paraopeba (four mines and two processing plants). Part of these operations is conducted by Vale s subsidiary MBR.	of itabirite ore relative to hematite ore. Itabirite ore has iron grade between 35% and 60% and requires concentration to achieve shipping grade.	generally processes the run-of-mine (ROM) by means of standard crushing, followed by classification and concentration steps, producing sinter feed, lump ore and pellet feed in the processing plants located at the mining complexes.	power network, produced directly by Vale or acquired under power purchase contracts,	products from the mines to Guaíba Island and Itaguaí maritime terminals in the Brazilian State of Rio de Janeiro. EFVM railroad connects certain mines to the port of Tubarão.

Table of Contents

Company/ Mining System	Location	Description / History	Mining	Operations	Power source	Access / Transportation
Central western System (1)	State of Mato Grosso do Sul	Open-pit mining operations. Two mines and two plants located in the city of Corumbá.	Hematite ore that mainly generates granulated ore.	Open-pit mining operations. The mine operates through standard crushing, followed by classification, producing granulated and fine.	Power provided by the national power network, acquired from regional utilities.	Part of the sales is carried in barges through the Paraguay River to ports in Argentina, then going to the European and Asian markets. Another portion of the sales is carried to clients at the ports of Corumbá.
Samarco	Iron Quadrangle region of the State of Minas Gerais	Integrated system comprised of two mines, three processing plants, three pipelines, four pellet plants and a port.	Itabiriteore	Open-pit mining operations. Three processing plants located in the facility process ROM by means of standard crushing, classification and concentration steps, producing sinter feed, lump ore and pellet feed. Samarco operations have been suspended following the breakage of one of its waste Fundão barrages in the State of Minas Gerais in November 2015	Power provided by the national power network, acquired from regional utilities or produced by Samarco.	Samarco mines serve Samarco processing plants by three pipelines of approximately 400 km. These pipelines transport the iron ore from the processing plants to the pelleting plants and from the pelleting plants to the port, in the State of Espírito Santo.

(1) Part of Vale s operations in the Central Western System is conducted by MCR.

1.2 Iron Ore Production

The following table sets forth information about Vale s iron ore production.

Table of Contents

Mine/Plant	Type	Production for fiscal year ended on December 31 2013	2014	2015	Recovery Process Rate in 2015 (%)
		(million metric tons)			
Southeastern System					
Itabira	Open pit	34.0	35.5	35.5	55.2
Minas Centrais	Open pit	37.8	33.0	41.2	67.7
Mariana	Open pit	37.6	38.9	35.9	81.8
Total Southeastern System		**109.4**	**107.4**	**112.6**	
Southern System					
Minas Itabirito		31.0	33.0	31.6	72.3
Vargem Grande	Open pit	22.0	25.0	29.3	70.7
Paraopeba	Open pit	26.0	28.2	25.8	95.1
Total Southern System		**79.0**	**86.2**	**86.7**	
Central western System					
Corumbá	Open pit	4.5	3.8	2.8	64.1
Urucum	Open pit	2.0	2.1	1.7	82.6
Total Central Western System		**6.5**	**5.8**	**4.5**	
Northern System					
Serra Norte	Open pit	104.9	117.4	127.6	98.2
Serra Leste	Open pit		2.2	2.0	98.7
Total Northern System		**104,9**	**119.6**	**129.6**	
Total of Vale (2)		**299.8**	**319.0**	**333.4**	
Samarco (3)	Open pit	10.9	13.1	12.7	53.6
Total		**310.7**	**332.1**	346.1	

(1) *The Água Limpa mine and plants are part of the Minas Centrais operations and are owned by Baovale Mineração S.A. (Baovale). Vale owns 100% of the voting shares and 50% of the total shares of Baovale. Production figures for* ***Água Limpa were not adjusted to reflect Vale s ownership interest.***

(2) *Production figures do not include the purchase of ore by third parties equal to 12.5 Mt in 2015, 12.3 Mt in 2014, and 10.6 Mt in 2013*

(3) *Production figures for Samarco, in which Vale has a 50% interest, have been adjusted to reflect Vale s ownership interest.*

1.1.3. Iron Ore Pellet Operations

Vale produces iron ore pellets in Brazil and in Oman, directly and by means of joint ventures, as shown in the table below. Vale also holds 25% in two iron ore pelleting plants in China, Zhuhai YPM Pellet Co., Ltd. (Zhuhai YPM) and Anyang Yu Vale Yongtong Pellet Co., Ltd. (Anyang). Vale s estimated total capacity is 64.7 million tons per year (Mtpa), including the full capacity of its Oman pelleting plants, but without its joint ventures Samarco, Zhuhai YPM and Anyang. Of the total 2015 pellet production, including the production from joint ventures, 68.6% corresponded to blast furnace pellets, and 31.4% corresponded to direct reduction pellets, which are used in steel mills that employ the direct reduction process rather than blast furnace technology. The Company meets all the iron ore needs of its pelletizing plants and part of the iron ore needs for Samarco and Zhuhai YPM. In 2015,

Vale sold 9.8 million metric tons of the mine production to Samarco and 0.9 million metric tons of the pellet production to Zhuhai YPM. Vale suspended its gross ore sales to Samarco due to the suspension of Samarco mining operations caused by the breakage of the Samarco s waste Fundão barrage in November 2015.

Company / Plant	Description / History	Nominal capacity (Mtpa)	Power source	Other information	Our participation (%)	Partners
Brazil:						
Vale						
Tubarão (State of Espírito Santo)	Our Three wholly-owned pelleting units (Tubarão I, II, and VIII) and leasing of five plants. The iron ore is received from Vale s mines in the Southeastern System and distribution is done by Vale s logistics infrastructure. The Tubarão VIII plant started operations in the first half ion 2014	36.7(1)	Power provided by the national power network, produced directly by Vale or acquired under power purchase contracts	Pelleting operations held in Tubarão I and II were suspended on November 13, 2012, due to changes in the demand of the steel industry for raw material, and they were replaced by operations at the Tubarão VIII plant, a new and more effective plant	100.0	
Fábrica (State of Minas Gerais)	Part of the Southern System. Receives iron ore from the João Pereira and Segredo	4.5	Power provided by the national power		100.0	

Table of Contents

Company / Plant	Description / History	Nominal capacity (Mtpa)	Power source	Other information	Our participation (%)	Partners
	mines. Most part of the production is transported through MRS and EFVM.		network, produced directly by Vale or acquired under power purchase contracts.			
Vargem Grande (State of Minas Gerais)	Part of the Southern System. Receives iron ore from the Sapecado, Galinheiro, Capitão do Mato and Tamanduá mines, and most of the production is transported through MRS.	7.0	Power provided by the national power network, produced directly by Vale or acquired under power purchase contracts		100.0	
São Luís (State of Maranhão)	Part of the Northern System. Receives iron ore from Carajás mines and production is delivered to customers through Vale s Ponta da Madeira maritime terminal.	7.5	Power provided by the national power network, produced directly by Vale.	On October 8, 2012, Vale suspended operations at the pelleting plant in São Luís, for reasons similar to the ones that led to the suspension of operations at the Tubarão I and II plants.	100.0	
Samarco	Four pelleting units with nominal capacity of 22.3 Mtpa. Pelleting units are located at Ponta Ubu, in Anchieta, State of Espírito Santo. The fourth pelleting plant started operations in the first half of 2014.	30.5	Power provided by the national power network, acquired from regional power companies or produced directly by Samarco.	In 2014, Vale started operation of a fourth pelleting plant with capacity of 8.3 Mtpa, to increase Samarco s pelleting nominal capacity to 30.5 Mtpa. In January 2016, Samarco suspended its pelleting operations when the pellet production became unavailable due to the suspension	50.0	BHP Billiton Brasil Ltda.

				of its mining activities in November 2015.		
Oman:						
Vale Oman Pelletizing Company LLC	Vale Industry Complex. Two pelleting plants, with total nominal capacity of 9.0 Mtpa. Pelleting plants are integrated to Vale s distribution center with nominal capacity of 40.0 Mtpa.	9.0	Power provided by the national power network.	Oman facilities are supplied with iron ore from the Quadrilátero de Ferro area, in the State of Minas Gerais, through the port of Tubarão.	70.0	Oman Oil Company S.A.O.C.

(1) Vale s environmental operating licenses for pelleting plants in Tubarão provide for a capacity of 36.2 Mtpa.

1.1.4 Pellet Production

The table below provides information regarding Vale s main iron ore pellet production.

	Fiscal year ending on December 31		
Firm	**2013**	**2014**	**2015**
	(million metric tons)		
Vale(1)	39.0	43.0	46.2
Samarco (2)	10.6	12.1	12.3
Total Production	**49.6**	**55.1**	**58.5**

Table of Contents

(1) The figure includes actual production, including the full production from Vale s pellet plants in Oman and four pelleting plants Vale leased in 2008, and a pelleting plant Vale has leased in Brazil in 2012. Vale signed a 10-year operating lease contract for Itabrasco s pellet plant in October 2008. Vale signed a five-year operating lease contract for Kobrasco s pellet plant in June 2008, renewed for another five years in 2013. Vale signed a 30-year operating lease contract for Nibrasco s two pellet plants in May 2008. On July 1, 2012, Vale signed a three-year operating lease contract for Hispanobrás pelleting plant, renewed for three years in 2015, and started consolidating production of this unit with Vale production.

(2) Production figures for Samarco, were adjusted to reflect Vale s ownership interest.

1.1.5. Clients, sales, and marketing

Vale supplies all of its iron ore and pellets (including its share in joint-venture pellet production) to the steel industry. Prevailing and expected levels of demand for steel products affect demand for iron ore and pellets. Demand for steel products is influenced by several factors, such as global industrial production, civil construction and infrastructure expenses.

In 2015, China accounted for 54% of Vale s iron ore and pellet shipments, and Asia, as a whole, accounted for 69%, while Europe, in turn, accounted for 15%, followed by Brazil with 11%. The ten largest customers of the Company collectively purchased 126 million metric tons of iron ore and pellets, representing 38% of the Company sales volumes of iron ore and pellets in 2015 and 35% of the total iron ore and pellet revenues of Vale. In 2015, no individual customer accounted for more than 10% of Vale s iron ore and pellet shipments.

In 2015, the Asian market (mainly Japan, South Korea, and Taiwan) and the European and Brazilian markets were the primary markets for Vale s blast furnace pellets, while the Middle East, North America and North Africa were the primary markets for direct reduction pellets.

Vale strongly emphasizes customer service in order to improve competitiveness. Vale works with its customers to understand their main objectives and to provide them with iron ore solutions to meet specific customer needs. Using the Company s expertise in mining, agglomeration and iron-making processes, Vale searches for technical solutions that will balance the best use of its world-class mining assets and the satisfaction of its customers. Vale believes that its ability to provide customers with a total iron ore solution and the quality of its products are very important advantages helping the Company to improve competitiveness in relation to competitors who may be more conveniently located geographically. In addition to offering technical assistance to customers, Vale operates sales support offices in St. Prex (Switzerland), Tokyo (Japan), Seoul (South Korea), Singapore, Dubai (UAE), and Shanghai (China) which support the sales made by Vale International. These offices also allow the Company to stay in closer contact with its customers, monitor their requirements and its contract performance, and ensure that the customers receive timely deliveries.

In 2015, Vale released a new iron ore fine product (Brazilian Blended Fines) to better serve market needs. Brazilian Blended Fines are a blend of fines from Carajás and the Southern System with good metallurgic performance and sintering capabilities. This product is sold from Terminal Marítimo de Teluk Rubiah in Malaysia, which, being closer to Asian clients, reduces the response time to those markets, and allows serving clients whose cargo receipt infrastructure and production scale are unable to receive large cargos, thus increasing Vale s distribution capillarity, using smaller vessels.

Vale sells iron ore and pellets under different agreements, including long-term agreements with customers and spot sales by means of auctions and business platforms. Vale s price determination is usually related to the index of prices in the spot market, like IODEX, and uses several mechanisms, including current spot prices and average prices for specific periods. When products are delivered prior to determination of the final price, Vale recognizes the sale based on a provisional price with subsequent adjustment to reflect the final price.

In 2015, Vale protected part of its total exposure to fuel prices related to (a) its own fleet and long term charter contracts (used to cover part of its carrying needs regarding CFR Cost and Freight sales) and (b) its FOB - Free on Board and domestic sales. Starting in 2016, Vale will no longer have fuel hedge transactions. Vale s fuel hedge transactions related to its own fleet and all charter contracts have been settled in 2015, but Vale still has outstanding hedge positions related to its FOB and domestic sales, which should be settled in 2016.

1.1.6. Competition

The global iron ore and iron ore pellet markets are highly competitive. The main factors affecting competition are price, quality and range of products offered, reliability, operating costs and shipping costs.

Vale s biggest competitors in the Asian market are located in Australia and include subsidiaries and affiliates of BHP Billiton PLC (BHP Billiton), Rio Tinto Ltd. (Rio Tinto), and Fortescue Metals Group Ltd (FMG). Vale is competitive in the Asian market for two reasons. First, steel companies generally seek to obtain the types (or blends) of iron ore and iron ore pellets that allow them to produce the intended final product in the most economical and efficient manner. Vale s iron ore has low impurity levels and other properties that generally lead to lower processing costs. For example, in addition to its high grade, the alumina grade of Vale s iron ore is very low compared to Australian ores, reducing consumption of coke and increasing productivity in blast furnaces, which is particularly important during periods of high demand. When demand is very high, the Company s quality differential usually is highlighted to customers. Second, steel companies often develop sales relationships based on a reliable supply of a specific mix of iron ore and iron ore pellets.

Table of Contents

Operation and control of the logistic systems integrated to the Northern and Southeastern Systems help the Company to ensure that its products are delivered on time and at a relatively low cost. In addition, Vale continues developing a low-cost freight portfolio, aimed at enhancing its ability to offer products in the Asian market at CFR-based competitive prices, despite higher transportation costs, compared to Australian producers. To support this strategy, Vale built two distribution centers, one in Oman and the other in Malaysia, and two floating transfer stations (STFs) in the Philippines. Vale entered into medium and long-term freight contracts, and owns or chartered vessels, including large-size ore carriers, known as Valemax, which reduce power consumption and greenhouse gas emissions, carrying a larger amount of cargo in a single trip, offering lower carrying costs. These investments increase the speed and flexibility for customization and reduce the market time required for its products.

Table of Contents

Vale s main competitors in the European market are: Kumba Iron Ore Limited; Luossavaara Kiirunavaara AB (LKAB); Société Nationale Industrielle et Minière (SNIM); and Iron Ore Company of Canada (IOC), subsidiary of Rio Tinto. Vale is competitive in the European market for the same reasons it is competitive in Asia, but also due to the proximity of its port facilities to European customers.

The Brazilian iron market is also competitive and includes several smaller iron ore producers and new companies that are developing projects. Anglo American is working on strengthening the Minas-Rio project. Some steel plants, as Gerdau S.A. (Gerdau), Companhia Siderurgica Nacional (CSN), Vallourec Tubos do Brasil S.A., Usiminas, and ArcelorMittal, also have iron ore operations. Although price is important, quality and reliability are important factors as well. Vale believes that its integrated transportation systems, its high quality ore and technical support make it a strong competitor in the Brazilian market.

Regarding pelleting, Vale s main competitors are LKAB, ArcelorMittal Canada (formerly Quebec Cartier Mining Co.), Iron Ore Company of Canada (IOC), and Bahrain Stell (formerly Gulf Industrial Investment Co).

1.2 Manganese ore and ferroalloys

1.2.1 Manganese ore production and operations

Vale conducts its manganese operations in Brazil through Vale S.A. and its wholly-owned subsidiaries Vale Manganês S.A. (Vale Manganês), and MCR. The Company s mines produce three types of manganese products:

- metallurgical ore used primarily in the production of manganese ferroalloys, raw material to produce carbon and stainless steel;
- natural manganese dioxide, suitable for the manufacturing of electrolytic batteries; and
- chemical ore used in various sectors for the production of fertilizers, pesticides and animal feed, and is also used as pigment in the ceramics industry.

Mining complex	Company	Location	Description / History	Mining	Operations	Power source	Access / Transportation
Azul (1)	Vale S.A.	Pará	Open pit mining operations and local processing plants.	High content ore (minimum manganese content of 40%)	Crushing, followed by classification, producing granulated and fine.	Power provided by the national power network, acquired from regional utility	Manganese ore is carried in trucks and by EFC to Ponta da Madeira maritime terminal.

						companies.	
Morro da Mina	Vale Manganês	Minas Gerais	Open pit mining operations and a large processing plant. In January 2015, Vale suspended its operations due to market conditions.	Low content ore (24% content of manganese).	Crushing and screening/ average classification, producing granulated and fine for ferroalloy plants in Barbacena and Ouro Preto.	Power provided by the national power network, acquired from regional utility companies.	Manganese ore is carried in trucks to the ferroalloy plants in Barbacena and Ouro Preto.
Urucum	MCR	Mato Grosso do Sul	Underground mining operations and local processing plants.	High content ore (minimum manganese content of 40%)	Crushing, followed by classification, producing granulated and fine.	Power provided by the national power network, acquired from regional utility companies.	The manganese ore is carried to the Rosário port (Argentina) in barges through the Paraguay and Paraná rivers.

Table of Contents

The table below presents information on Vale s manganese production.

Mine	Type	Production during fiscal year ending December 31 2013	2014	2015	Process Recovery in 2015 (%)
		(million metric tons)			
Azul	Open pit	1.9	1.7	1.7	54.0
Morro da Mina(1)	Open pit	0.1	0.1		
Urucum	Underground	0.4	0.6	0.7	83.0
Total		**2.4**	**2.4**	**2.4**	

(1) Vale suspended the operations of the Morro da Mina mine in 2015 due to market conditions.

1.2.2 Ferroalloy production and operations

Vale conducts its manganese ferroalloy businesses through its wholly-owned subsidiary Vale Manganês.

The production of manganese ferroalloys consumes significant amounts of power, representing 2.7% of the Company total consumption in Brazil in 2015. The power supply for Vale s ferroalloy plants is provided through long-term power purchase contracts. For information on risks associated to possible power supply issues, see item 4.1 in this Reference Form.

Vale produces several types of manganese ferroalloys, such as high carbon and medium carbon manganese and ferro-silicon manganese.

Plant	Location	Description / History	Nominal capacity	Power source
Minas Gerais Plants	Cities of Barbacena and Ouro Preto	Barbacena has six furnaces, two refinery stations and a crushing plant. Ouro Preto has three furnaces.	74,000 tons are processed per year at the plant in Barbacena and 65,000 tons per year at the plant in Ouro Preto.	Power provided by the national power network. Power also acquired from independent producers under power purchase agreements.
Bahia Plants	City of Simões Filho	Four furnaces, two conversion process and one sintering plant.	150,000 tons per year	Power provided by the national power network. Power also acquired from CHESF or power purchase agreements.

The table below presents information on Vale s production of ferroalloys.

Plant	Production during fiscal year ending December 31		
	2013	2014	2015
	(thousand metric tons)		
Barbacena	45	50	6
Ouro Preto	48	8	1
Simões Filho	82	113	92
Total	**175**	**171**	**99**

Vale has suspended operations at the Ouro Preto plant in February 2014, due to market conditions. In January 2015, the power purchase agreement, under which the Company purchases power to its plants in Barbacena and Ouro Preto terminated and the Company has suspended operations at the Barbacena plant as well. Vale is considering alternatives for power provision to these plants, considering power prices and current market conditions for manganese ferroalloys.

1.2.3 Manganese ore and ferroalloys: market and competition

The markets for manganese ore and ferroalloys are highly competitive. Competition in the manganese ore market takes place in two segments. High-grade manganese ore competes on a global seaborne basis, while low-grade ore competes on a regional basis. For some manganese ferroalloys, high-grade ore is mandatory, while for others high- and low-grade ores are complementary. The main suppliers of high-grade ores are located in South Africa, Gabon, Australia and Brazil. The main producers of low-grade ores are located in Ukraine, China, Ghana, Kazakhstan, India and Mexico.

The manganese ferroalloy market is characterized by a large number of participants who compete primarily on the basis of price. The principal competitive factors in this market are the costs of manganese ore, power, logistics and reductants, like copper and coal. Vale competes with stand-alone producers and integrated producers that also mine their own ore. The Company competitors are located mainly in countries that produce manganese ore or carbon steel.

Table of Contents

2. Base Metals

2.1 Nickel

2.1.1 Operations

Vale conducts its nickel operations mainly through its wholly-owned subsidiary Vale Canada, which operates two nickel production systems, one at the North Atlantic and one in Asia-Pacific. The Company also operates a third nickel production system, Onça Puma, in South Atlantic. Vale s nickel operations are presented in the table below.

Mining System / Company	Location	Description / History	Operations	Mining license	Power source	Access / Transportation
North Atlantic						
Vale Canada	Canada Sudbury, Ontario	Integrated mining, crushing, smelting and refining operations to turn ore into refined nickel with nominal capacity of 66,000 metric tons of refined nickel per year and additional *feed* of nickel oxide to the refinery in Wales. Mining operations in Sudbury started in 1885. Vale acquired Sudbury operations in 2006.	Primarily underground mining operations with sulfate nickel with some copper, cobalt, PGMs, gold, and silver. The Company also conducts smelting and refining of nickel concentrate at its operations in Voisey s Bay. Additionally, to producing finished nickel in Sudbury, Vale sends an intermediate product, nickel oxide, to its nickel refinery in Wales to process it into end products. Vale also is able to send nickel oxide to Asian Vale	Patented mining rights with no expiration date; mining leases end in 2016 and 2035; and mining license with undetermined validity term.(1)	Power provided by the Ontario power network and produced directly by Vale.	Located at the TransCanada road and two main railroads cross Sudbury. Finished products are delivered to the North-American market by truck. For customers abroad, products are loaded in containers and travel in intermodal model (truck / train / cargo vessel) for ports in Canada s eastern and western coast.

			refineries. As part of Vale s efforts to reduce sulphur dioxide emissions and other emissions for purposes of compliance with Ontario and Manitoba rules changes and rationalize its foundry and refining assets throughout Canada, Vale will change its processes, including a change to a unique furnace in Sudbury in 2017.			
Vale Canada	Canada Thompson, Manitoba	Integrated mining, crushing, *smelting* and refining operations to turn ore into refined nickel with nominal capacity of 50,000 metric tons of refined nickel per year. Mining at Thompson was discovered in 1956 and acquired by Vale in 2006.	Primarily underground mining operations with sulfate nickel. These resources also contain some copper and cobalt. The local concentrate with nickel concentrate at the operations in Voisey s Bay for smelting and refining aiming to achieve a high quality nickel plate product. Vale is considering eliminating *smelting* and refining processes in Thompson, due to new federal rules of sulfur dioxide emissions to be in force in 2015. Vale initially ensured an extension of the deployment	Application before the Lease Council matures between 2020 and 2025; mining leases end in 2034.	Power provided by public utilities at the province.	Finished products are delivered to the North-American market by truck. For customers abroad, products are loaded in containers and travel in intermodal model (truck / train / cargo vessel) for ports in Canada s eastern and western coast.

				of the current Pollution Prevention Plan under the terms in the Canadian Environment Protection Law with Environment Canada that allows smelting and refining until 2018, subject to negotiated issuance limits.			
Vale Newfoundland & Labrador Limited	Canada	Bay Voisey	Open pit mine and ore processing into intermediate and	Comprised by the Ovoid open pit mine and deposits for	Mining concession end	The power at Voisey s Bay is	Nickel and copper concentrates are

Table of Contents

Mining System / Company	Location	Description / History	Operations	Mining license	Power source	Access / Transportation
	and Long Harbour, Newfound-land & Labrador	end products nickel and copper concentrate with estimated nominal capacity of approximately 50,000 metric tons of refined nickel per year, with the growth of the Long Harbour plant. s Bay operations started in 2005 and were acquired by Vale in 2006.	underground operations at a later moment. Vale extracts sulfate nickel ore, which also contain some copper and cobalt. Most part of the nickel concentrates are currently sent to Vale operations in Sudbury and Thompson, for final processing (smelting and refinery), while copper concentrate is sold in the market. The Long Harbour plant continued the ramp-up in 2015. During preparation in 2015, Long Harbour processed a mix of concentrate with high nickel content from Voisey s Bay with nickel matt from PT Vale Indonesia Tbk PTVI and will migrate to concentrates from Voisey s Bay in 2016.	in 2027, with right to later renewals, always for ten-year periods.	100% provided by Vale diesel generators. The power at the Long Harbour refinery is provided by public utilities at the province.	carried to the port by trucks and then are shipped on solid bulk vessels for external markets or Vale s operations in Long Harbour or other Canadian operations for additional refining.
Vale Europe Limited	UK Clydach, Wales	Autonomous nickel refinery (producer of refined nickel), with nominal capacity of 40 thousand metric tons per year. The Clydach Refinery started operations in 1902 and was	Processes a nickel intermediate product nickel oxide, provided by Sudbury or Matsuzaka to produce refined nickel as powder or		Power provided by the national power network.	Transported for the end customer in the United Kingdom and the continental Europe by truck. Products are sent to customers

		acquired by Vale in 2006.	pellets.			abroad by truck to the ports in Southampton and Liverpool, and shipped into ocean containers.
Asia-Pacific						
PT Vale Indonesia Tbk (PTVI,)	Indonesia Sorowako, Sulawesi	Open pit mine and respective processing plant (producer of matte nickel, and intermediate product) with nominal capacity of approximately 80,000 metric tons of matte nickel per year. PTVI stock are traded at the Indonesia Stock Exchange. Vale indirectly holds 59.3% of the capital stock of PTVI and Sumitomo Metal Mining Co., Ltd (Sumitomo) holds 20.2% and Sumitomo Corporation holds 0.1% and the public holds 20.5%. PVTI was created in 1968, started operations in 1978 and was acquired by Vale in 2006.	PTVI extracts lateritic nickel ore and produces matte nickel which is sent to refineries in Japan. According to guaranteed sale agreements during the mine use life, PTVI sells 80% of its production to its wholly-owned subsidiary Vale Canada and 20% to Sumitomo.	The employment agreement ends in 2025, with the right to extend its operations until, for two consecutive ten-year periods, subject to the approval of the Government of Indonesia.	Power produced at PTVI low cost hydroelectric power plants in the Larona River (there are currently three units). PTVI has thermal generators to complement its power supply with a power source that is not subject to hydrological factors.	Carried by truck for approximately 55 km to the river port, in Malili, and shipped in barges to load cargo ships to send to Japan.
Vale Nouvelle-Calédonie S.A.S (VNC)	New Caledonia Southern Province	Mining and processing operations (producer of nickel oxide and cobalt carbonate). VNC shares are held by Vale (80.5%), Sumic (14.5%) and Société de Participation Minière du Sud Caledonien SAS (SPMSC) (5%).(2)	Vale s nickel operations in New Caledonia are in *ramp-up*. VNC uses a high-pressure acid leaching process (HPAL) to handle lateritic limonitic and lateritic saprolitic ores. Vale expects to continue with the *ramp-up* in VNC in the next three years to reach nominal	Mining concession ending between 2016 and 2051. VNC requested a renewal of the only concession that is due to end in 2015.	Power supplied by the national power network and independent producers.	Products are carried into containers and transported by truck for approximately 4 km to the Prony port and shipped in an ocean container.

	production capacity of 57,000 metric tons per year of nickel contained as nickel oxide, to be subsequently processed in its facilities in Asia, as hydroxide (IPNM) and 4,500 metric tons of cobalt as

Table of Contents

Mining System / Company	Location	Description / History	Operations	Mining license	Power source	Access / Transportation
			carbonate.			
Vale Japan Limited	Japan - Matsuzaka	Autonomous nickel refinery (producer of refined nickel), with nominal capacity of 60,000 metric tons per year. Vale holds 87.2% of shares, and Sumitomo holds the remaining stock. The refinery was built in 1965 and acquired by Vale in 2006.	Produces intermediate products to be subsequently treated in Vale s refineries in Asia and the United Kingdom, and nickel end products using matte nickel provided by PTVI.		Power provided by the national power network. Acquired from regional utilities.	Products are transported by public roads to customers in Japan. For customers abroad, products are carried into containers in the plant and sent through the Yokkaichi and Nagoya ports.
Vale Taiwan Ltd	Taiwan - Kaoshiung	Autonomous nickel refinery (producer of refined nickel), with nominal capacity of 18,000 metric tons per year. The refinery started production in 1983 and was acquired by Vale in 2006.	Produces refined nickel for the stainless steel industry, using intermediate products from Vale operations in Matsuzaka and New Caledonia.		Power provided by the national power network. Acquired from regional utilities.	Products transported by truck on public roads for customers in Taiwan. For customers abroad, products are carried into containers at the plant and sent through the Kaoshiung port.
Vale Nickel (Dalian) Co. Ltd	China - Dalian, Liaoning	Autonomous nickel refinery (producer of refined nickel), with nominal capacity of 32,000 metric tons per year. Vale holds 98.3% of shares and a Ningbo Sunhu Chemical Products Co., Ltd. holds the remaining 1.7%. The refinery started production in 2008.	Produces refined nickel for the stainless steel industry, using intermediate products mainly from Vale operations in Matsuzaka and New Caledonia.		Power provided by the national power network. Acquired from regional utilities.	Product carried by truck on public roads and railroads for customers in China. Also provided by containers for some foreign and domestic customers.
South Atlantic						
Vale/Onça Puma	Brazil - Ourilândia do Norte, Pará	Mining, smelting, and refining operations producing high quality ferro-nickel	The Onça Puma mine is built over a nickel deposit of lateritic and	Mining concession for undetermined period.	Power provided by the national power network, produced directly by Vale	Ferro-nickel is transported by paved public road and by railroad to Vila

	to be used in the stainless steel industry	saprolitic ore. The operation produces ferro-nickel through a rotating electric furnace process. Vale is currently operating with one single line, which nominal capacity is estimated at 25,000 metric tons per year. The Company will consider opportunities to restart operations at the second line, depending on market perspectives and performance of the single- line furnace.	or acquired under power purchase contracts.	do Conde maritime terminal, in the Brazilian State of Pará. Exporting operations are done in ocean containers.

(1) In Sudbury, eight concessions will end in 2016. Vale filed applications to renew these concessions, but the approval process may take several years. Vale will be able to continue with its operations during the approval procedures.

(2) Sumic is a joint venture between Sumitomo and Mitsui. Considering that VNC did not meet a specific production goal by December 2015, Vale Canada will acquire all the interests of Sumic held in VNC according to the shareholders agreement of VNC. The share purchase price is US$135 million and Vale Canadá will settle a total value of US$ 218 million of debt financing granted by Sumic to VNC. The transaction is to be concluded in March 2016, but the payment for the purchase by Vale Canadá and the settlement of the financing by Sumic should occur in March 2017. Upon conclusion of the transaction in March 2016, Vale will hold 95% of the shares of VNC. The other shareholder, SPMSC, must increase its share in VNC to 10% in two years starting at the beginning of the commercial production.

Table of Contents

2.1.2 Production

The following table sets forth Vale s annual mine production by operating mine (or on an aggregate basis for areas operating in Sulawesi, operated by PTVI, in Indonesia) and the average percentage grades of nickel and copper. The mine production at Sulawesi represents the product from PTVI s dryer kilns delivered to PTVI s processing operations and does not include nickel losses due to drying and smelting. For Vale operations in Sudbury, Thompson and Voisey s Bay, the production and average grades represent the mine product delivered to those operations respective processing plants and do not include adjustments due to processing, smelting or refining. For VNC operations, in New Caledonia, production and average content represent local ore production, without losses due to processing.

	Production during fiscal year ending December 31								
	2013			**2014**			**2015**		
		Grade			**Grade**			**Grade**	
	Production	**Copper (%)**	**Nickel (%)**	**Production**	**Copper (%)**	**Nickel (%)**	**Production**	**Copper (%)**	**Nickel (%)**
Ontario operating mines									
Copper Cliff North	913	1.32	1.28	1,053	1.45	1.34	1,138	1.42	1.38
Creighton	915	2.01	2.19	903	1.81	2.47	774	2.00	2.33
Stobie	1,887,	0.59	0.65	2,089	0.58	0.66	1,471	0.63	0.73
Garson	815	1.42	1.75	678	1.39	1.75	778	1.39	1.94
Coleman	1,515,	3.15	1.52	1,385	3.10	1.52	1,309	2.95	1.56
Ellen	109	0.49	1.00	181	0.62	1.07	165	0.70	0.95
Totten	64	1.84	1.92	303	1.98	1.50	528	1.88	1.62
Gertrude	196	0.32	0.89						
Total Ontario operations	**6,414,**	**1.61**	**1.33**	**6,591**	**1.57%**	**1.36**	**6,164**	**1.64**	**1.46**
Manitoba operating mines									
Thompson	1,175	–	2,07	1,184		1.95	1,163		1.82
Birchtree	613	–	1,39	545		1.39	564		1.47
Total Manitoba operations	**1,788**		**1,84**	1,729		1.78%	**1,727**		**1.71**
Voisey s Bay operating mines									
Ovoid	2,318	1,68	2,89	2,243	1.54%	2.58%	2,328	1.51	2.57
Sulawesi operating mining areas									
Sorowako	4,369	–-	2,00	4,391		1.99%	4,694		1.99%
Mine operations in New Caledonia									
VNC	1,860	–	1,36	2,134		1.44%	2,561		1.41%
Mines in operation in Brazil									
Onça Puma	263	–	2,28	1,358		2.19%	1,024		2.13%

The following table sets forth information about Vale s nickel production, including: (i) nickel refined at its facilities, and (ii) intermediates designated for sale. The figures below are reported on an ore-source basis.

Table of Contents

Mine	Type	Production for fiscal year ending December 31 2013	2014	2015
			(Thousands of metric tons)	
Sudbury (1)	Underground	69.4	64.3	54.4
Thompson (1)	Underground	24.5	26.1	24.8
Voisey s Bay(2)	Open pit	63.0	48.3	53.0
Sorowako (3)	Open pit	78.8	78.7	79.5
Onça Puma(4)	Open pit	1.9	21.4	24.4
New Caledonia (5)	Open pit	16.3	18.7	26.9
External (6)	–	6.4	17.5	27.6
Total(7)		**260.2**	**274,9**	**290.6**

(*1*) *Primary nickel production only (i.e., does not include secondary nickel from unrelated parties).*
(*2*) *Includes finished nickel produced at its Sudbury and Thompson operations, although informed based on the ore source in Voisey s Bay.*
(*3*) *These figures are not required to reflect Vale s share. Vale holds 59.2% interest in PTVI, which owns the Sorowako mines.*
(*4*) *Primary nickel production only. Nickel found in iron nickel.*
(*5*) *Nickel found in nickel hydroxide (NHC) and nickel oxide (NiO). These figures are not required to reflect Vale s share. Vale holds 80.5% in VNC.*
(*6*) *Finished nickel processed at Vale s facilities using feeds purchased from unrelated parties.*
(*7*) *These figures do not include tolling of feeds for third-party.*

2.1.3 Clients and sales

Vale s nickel customers are broadly distributed on a global basis. In 2015, 48% of the total nickel sales of Vale were delivered to customers in Asia, 24% to North America, 27% to Europe and 1% to other markets. Vale has short-term fixed-volume contracts with customers for the majority of its expected annual nickel sales. These contracts generally provide stable demand for a significant portion of its annual production.

Nickel is an exchange-traded metal, listed on the London Metal Exchange (LME), and most nickel products are priced according to a discount or premium to the LME price, depending primarily on the nickel product s physical and technical characteristics. Vale s finished nickel products represent what is known in the industry as primary nickel, meaning nickel produced principally from nickel ores (as opposed to secondary nickel, which is recovered from recycled nickel-containing material). Finished primary nickel products are distinguishable according to the following characteristics, which determine the product price level and the suitability for various end-use applications:

Table of Contents

- Nickel content and purity level: (i) intermediate products present various levels of nickel content, (ii) nickel pig iron has 1.5% to 6% nickel, (iii) ferro-nickel has 10% to 40% nickel, (iv) finished nickel presenting less than 99.8% of nickel, including products such as Tonimet and Utility Nickel , (v) standard LME grade nickel has a minimum of 99.8% nickel, and (vi) high purity nickel has a minimum of 99.9% nickel and does not contain specific elemental impurities;

- Shape (such as pellets, discs, squares, strips and foams); and

- Size (which varies according to the type of product and covers spherical products, as powder with less than one micron or 5mm granulates, and rectangular formats, as 1,000 mm x 750 mm x 15 mm cathode leaves).

In 2015, the principal end-use applications for nickel were:

- Stainless steel (67% of global nickel consumption);

- Non-ferrous alloys, alloy steels and smelting (17% of global nickel consumption);

- Nickel plating (7% of global nickel consumption); and

- Specialty applications, such as batteries, chemicals and powder metallurgy (9% of global nickel consumption).

In 2015, 58% of Vale s refined nickel sales were made into non-stainless steel applications, compared to the industry average for primary nickel producers of 33%, offering better stability for its sales volumes. As a result of Vale s focus on such higher-value segments, the average realized nickel prices for refined nickel have typically exceeded LME cash nickel prices.

The Company offers sales and technical support to its customers on a global basis. The Company has a well-established global marketing network for refined nickel, based in Toronto, Canada. Vale also has sales and technical support offices in St. Prex (Switzerland), Saddle Brook, New Jersey (United States), Tokyo (Japan), Shanghai (China), Singapore, and Kaohsiung (Taiwan).

2.1.4 Competition

The global nickel market is highly competitive. Vale s key competitive strengths include its long-life mines, low production costs compared to other nickel producers, sophisticated exploration and processing technologies, along with a diversified portfolio of products. The global marketing reach, diverse product mix, and technical support direct the products to the applications and geographic regions that offer the highest margins for its products.

Nickel deliveries of Vale represented 15% of global consumption for primary nickel in 2015. In addition to Vale, the largest suppliers in the nickel industry (each with their own integrated facilities, including nickel mining, processing, refining and marketing operations) are: Mining and Metallurgical Company Norilsk Nickel, Jinchuan Nonferrous Metals Corporation, and Glencore South 32. Together with Vale, these companies accounted for about 46% of global finished primary nickel production in 2015.

While stainless steel production is a major driver of global nickel demand, stainless steel producers can use nickel products with a wide range of nickel content, including secondary nickel (scrap). The choice between primary and secondary nickel is largely based on their relative prices and availability. Between 2012 and 2015, secondary nickel has accounted for about 40% to 43% of total nickel used to manufacture stainless steels, and primary nickel has accounted for about 57% to 601%. Nickel pig iron is a low-grade nickel product made mainly in China from imported lateritic ores that is suitable for use in stainless steel production. Starting in January 2014, the production of nickel pig iron in China was adversely affected by the restrictions on the exportation of unprocessed ore in Indonesia. Thus, there is an estimate that the nickel pig iron production dropped 20% year after year to approximately 360,000 metric tons, representing 23% of the global supply of primary nickel. The significant ore inventories stored in Indonesia and China, as well as the increased importation of the ore by the Philippines, minimized the effects of this drop in nickel pig iron production in 2015. Vale expects that the nickel pig iron production in China will drop even more in 2016 and 2017, with the end of high quality ore reserves in China.

Competition in the nickel market is based primarily on quality, reliability of supply and price. Vale believes its operations are competitive in the nickel market because of the high quality of its nickel products and its relatively low production costs.

2.2 Copper

2.2.1 Operations

Vale operates its copper businesses in Brazil at the parent-company level and in Canada through its wholly-owned subsidiaries.

Table of Contents

Mining complex / Location	Location	Description / History	Mining / Operations	Mining License	Power source	Access / Transportation
Brazil						
Vale/Sossego	Carajás, State of Pará	Two main areas of copper, Sossego and Sequeirinho, and a processing facility to concentrate the ore. Sossego was developed by Vale and started production in 2004; with nominal capacity of 100,000 Terapascal (tpa) of copper concentrate.	Copper ore is explored in an open pit mine and is processed by primary crushing and transportation, SAG milling (a semiautogene mill using a large rotating drum full of ore, water and steel crushing spheres transform the ore into a fine paste), milling, copper fluctuation in concentrate, waste disposal, concentrate, discharge filter.	Mining concession for undetermined period.	Power provided by the national power network, produced directly by Vale or acquired under power purchase contracts.	The concentrate is transported by truck to the storage terminal in Parauapebas and, subsequently, is taken by the EFC to the port of Itaqui, in São Luís, State of Maranhão. Vale built an 85 km road connecting Sossego to Parauapebas.
Vale/Salobo	Carajás, State of Pará	The Salobo I processing plant started production in 2012 and has a total capacity of 100,000 tpa of copper concentrate. The open pit mine and the plant are working on the increase of the capacity to 200.000 tpa of copper concentrate, with total deployment of the expansion of Salobo II.	Vale s copper and gold mine in Salobo is an open pit mine and the ore is processed by primary and secondary standard crushing, rollers, sphere milling, concentrate copper floating, residue disposal, concentrate closeness, disposal filter.	Mining concession for undetermined period.	Power provided by the national power network, acquired under the terms of power purchase agreements.	The concentrate is transported by truck to the storage terminal in Parauapebas and, subsequently, is taken by the EFC to the port of Itaqui, in São Luís, State of Maranhão. Vale built a 90 km road connecting Salobo to Parauapebas.
Canada						
Vale Canada	Canada Sudbury, Ontario	See Base metals Nickel - Operations	Vale generates two intermediate copper products: copper concentrate and copper anodes. Vale also produces copper finished products, copper	See table of Vale s nickel operations.		

			cathodes of electrolytic copper as by product of nickel refining operations. As part of Vale s efforts to reduce sulphur dioxide emissions and other emissions for purposes of compliance with Ontario and Manitoba rules changes and rationalize its foundry and refining assets throughout Canada, Vale will change its processes, including a change to a unique furnace in Sudbury in 2017. In order to prepare for this change, Vale will close the copper anode production unit in Sudbury in 2016, causing increase to the copper concentrate and copper intermediate productions.			
Vale Canada/Voisey s Bay	Canada Voisey s Bay, Newfoundland and Labrador	See Base metals Nickel - Operations	At Voisey s Bay, Vale produces concentrate copper.	See table of Vale s nickel operations		
Zambia						
Lubambe	Zambian Copperbelt	Lubambe copper mine (formerly known as Konkola North), includes an underground mine, plant and related infrastructure. Teal Minerals (TEAL)	Nominal production capacity of 45,000 metric tons per year of concentrate copper. Production started in October 2012.	Mining concessions end in 2033.	Long term power supply agreement with a Zesco (power supplier owned by the government of Zambia).	Concentrate copper is transported by truck to local smelters.

Table of Contents

Mining complex / Location	Location	Description / History	Mining / Operations	Mining License	Power source	Access / Transportation
		(50/50 joint venture of Vale and African Rainbow minerals (ARM) indirectly holds 80% interest in Lubambe. ZCM Investments Holding PLC holds the remaining share (20%).				

2.2.2 Production

The following table provides information about Vale s copper production.

Mine	Type	Fiscal year ending December 31 2013	2014 (million metric tons)	2015
Brazil:				
Salobo:	Open pit	65	98	155
Sossego	Open pit	119	110	104
Canada:				
Sudbury	Underground	103	98	98
Voisey s Bay	Open pit	36	33	32
Thompson	Underground	2	2	1
External (1)	–	24	29	23
Chile:				
Tres Valles (2)	Open pit and underground	11		
Zambia:				
Lubambe (3):	Underground	9	10	10
Total		**370**	**380**	**424**

(1) Vale processes copper at its facilities using third party resources.

(2) Vale sold Tres Valles in December 2013. Production in 2013 refers to production by the end of October

(3) Vale s attributable production capacity is 40%, representing 80% of indirect interest by means of its 50% share.

2.2.3 Clients and sales

The copper concentrate from Sossego and Salobo is sold under mid and long-term contracts executed with copper smelters in Europe, India, and Asia. Vale maintains medium- and long-term copper distribution agreements with Glencore Canada, to sell anode copper and a significant part of copper concentrate produced in Sudbury. Copper concentrate from Voisey s Bay is sold under mid-term agreements with clients in Europe. Electrolytic copper from Sudbury is sold in North America under short-term sale agreement.

2.2.4 Competition

The copper global market is highly competitive. Producers are mining companies and customized smelters that cover all areas of the world; the customers are mostly producers of copper wires, rods and alloy. Competition takes place mostly at a regional level, and is based mostly in production, quality, distribution reliability and logistics costs. The largest cathode copper producers in the world are Corporación Nacional del Cobre de Chile (Codelco), Aurubis AG, Glencore Xstrata, Freeport-McMoRan Copper & Gold Inc. (Freeport-McMoRan), Jiangxi Copper Corporation Ltd and Glencore, operating at the parent company level or through subsidiaries. Vale s participation in the global refined copper cathodes market is negligible, because Vale has adopted a more competitive market position for copper concentrate.

Copper concentrate and copper anodes are intermediate products in the copper production chain. The concentrate and anode markets are competitive, with several producers, but few participants and smaller volumes than in the cathode copper market due to the high levels of integration of large copper producers.

In the copper concentrate market, the main producers are mining companies located in South America, while the consumers are smelters located mainly in Europe and Asia. Competition in the copper concentrate market takes place mostly at a global level, and is based mostly in product cost, quality, logistics costs and distribution reliability. Main competitors in the copper concentrate market are BHP Billiton, Freeport-McMoRan, Glencore, Codelco, and Antofagasta plc, operating at a parent company level and through subsidiaries. Vale s market share in 2015 was approximately 4% of the total concentrate market.

Table of Contents

The copper anode/blister market is very limited. In general, anodes are produced to supply the integrated refining of every company. Anode/blister trade is limited to facilities that have more smelting capacity than what the plant can handle or the financial situation regarding logistics costs is an incentive to purchase anodes from other smelters. The main competitors in the anode market in 2015 were Codelco, Glencore, and China Nonferrous Metals, operating at a parent company level or through its subsidiaries.

2.3 PGM and other precious metals

As by-products of the Sudbury nickel operations in Canada, Vale recovers significant quantities of metals of the platinum group, as well as small quantities of gold and silver. Vale operates a processing facility in Port Colborne, Ontario, which produces PGMs, gold and silver intermediate products, using feeding from the operation in Sudbury. Vale has a refinery in Acton, England, where it processes intermediate products, as well as feeds purchased from unrelated parties and toll refined products. In the fiscal year ending on December 31, 2015, PGM concentrates from its Canadian operations account for 60% of its PGM production, which also includes metals purchased from unrelated parties. The base metal commercial department sells PGMs and other precious metals, as well as products from unrelated parties and toll-refined products, based on commission. Vale s copper concentrate from the Salobo and Sossego mines in Carajás, State of Pará, Brazil, also contain gold, which value is considered in the sale of such products.

In February 2013, Vale Switzerland S.A. signed an agreement with Silver Wheaton Corp. to sell 70% of the gold produced as a byproduct at its nickel mines in Sudbury, in Canada, in the next 20 years, and with Silver Wheaton (Caymans) Ltd. to sell 25% of payable gold flows produced as byproduct at its copper mine in Salobo, in Brazil, during the mine use life.

Additionally, on March 2, 2015, Vale executed a contractual amendment with Silver Wheaton (Caymans) Ltd., a wholly-owned subsidiary for purpose of selling the additional 25% flow of payable gold, produced as sub product of copper mining at the Salobo mine during the mine s use life. Under the terms in the goldstream agreement, Silver Wheaton received 141,879 troy ounces of gold in 2015. For further information on the contracts executed with Silver Wheaton Corp. and Silver Wheaton (Caymans) Ltd., see items 5.2(e), 6.7, and 10.3 (b) in this Reference Form.

The following table presents information on the Company s production of precious metals.

		Fiscal year ending December 31		
Mine(1)	**Type**	**2013**	**2014**	**2015**
			(Thousand troy ounces)	
Sudbury:				
Platinum	Underground	145	182	154
Paladium	Underground	352	398	341
Gold	Underground	91	83	89
Salobo:				
Gold	Open pit	117	160	251
Sossego:				
Gold	Open pit	78	78	80

(1) *Figures represent 100% of the gold production in Salobo and Cadbury and do not exclude the portion of gold sold to Silver Wheaton*

2.4 Cobalt

Vale recovered significant quantities of cobalt, classified as a minor metal, as a by-product of its nickel operations. In the year ending on December 31, 2015, the Company produced 1,448 metric tons of refined cobalt metal at the Port Colborne refinery 2,926 metric tons of cobalt in a cobalt-based intermediate at the nickel operations in Canada and New Caledonia, the remaining cobalt production consisted of 159 metric tons of cobalt contained in other intermediate products (such as nickel concentrates). As result of the ramp-up of VNC operations in New Caledonia, the production of intermediate cobalt as by-product of nickel production is increasing. Vale sold cobalt on a global basis. Its cobalt metal, which is electro-refined at the Port Colborne refinery, has very high purity levels (99.8%), value higher than specified in LME contracts. Cobalt metal is used in the production of various alloys, particularly for aerospace applications, as well as the manufacture of cobalt-based chemicals.

The following table sets forth information on Vale s cobalt production.

Table of Contents

Mine	Type	Fiscal year ending December 31 2013	2014 (Metric tons)	2015
Sudbury	Underground	853	833	751
Thompson	Underground	292	489	365
Voisey s Bay	Open pit	256	952	849
New Caledonia	Open pit	1,117	384	2,391
External sources (1)	–	13	84	177
Total		**3,532**	**743**	**4,533**

3. Coal

3.1. Operations

Vale produces metallurgic and thermal coal by its subsidiaries Vale Moçambique, which operates the Moatize mine, and Vale Australia, which operates the mine in Carborough Downs. Vale also holds minority interest in the Chinese company, Henan Longyu Energy Resources Co., Ltd. (Longyu).

In December 2014, Vale executed an investment contract in order to have Mitsui acquire 15% of its interest in Vale Moçambique. Its interest in Vale Moçambique will be transferred to a company under common control of Vale (85%) and Mitsui (15%). The value attributed to the 15% interest held by Mitsui in Vale Moçambique is US$ 450 million, and Mitsui is responsible for 15% of capital expenditures incurred since the date of execution of the contract. This transaction is subject to certain precedent conditions and closure is expected to occur in 2016.

Company / Mining complex	Location	Description / History	Mining / Operations	Mining license	Power source	Access / Transportation
Mozambique						
Vale Moçambique Moatize	Tete, Mozambique	Open pit mine developed directly by Vale. Operations started in August 2011 and should achieve nominal production capacity of 22 Mtpa, considering the Moatize expansion, comprised of metallurgic and thermal coal, and the expansion of the Nacala Logistic Corridor. Vale holds 95.0% interest and the	Produces metallurgic and thermal coal. The main brand product of Moatize is Chipanga premium hard coking coal, but there is operational flexibility for other products. The ideal product portfolio will come as result of market surveys. Coal	Mining concession ends in 2032, renewable after this date.	Power provided by local utility companies. Supply of local back-up.	Coal is transported from the mine to the port of Beira through railroad Linha do Sena and, starting in January 2016, to the port of Nacala-a-Velha, through the Nacala Corridor.

		remaining shares are held by Empresa Moçambicana de Exploração Mineira, S.A. Due to conclusion of the agreement executed in December 2014, Mitsui will acquire 15% of Vale s share in Vale Moçambique.	from mines is processed at a coal handling and preparation plant CHPP) with capacity of 4,000 metric tons per hour.			
Australia						
Integra Coal	Hunter Valley, New South Wales	Acquired from AMCI in 2007. Mining concessions at Carborough Downs include Rangal Coal Measures, in Bowen Basin, with the Leichardt and Vermont reserves. Both present coking properties and may be processed to produce metallurgic coal products and pulverized coal injection (PCI).	Metallurgic coal. The Leichardt reserve is the main development goal of Vale and comprises 100% of the reserve and current resources. The coal from Carborough Downs is processed	Mining leases expire in 2035 and 2039.	Power provided by the national power network, acquired from local regional utility companies.	The product is carried in trains at the loading rail station and carried for 163 km to the Dalrymple Bay Coal terminal, in

Table of Contents

Company / Mining complex	Location	Description / History	Mining / Operations	Mining license	Power source	Access / Transportation
		Vale holds 90.0% interest and the remaining shares are held by JFE, Posco.	at the Carborough Downs CHPP, with processing capacity of 1,000 metric tons per hour.			Queensland, Australia.

3.2 Production

The table below presents information on Vale s marketing coal production.

Operation	Mine type	Production during fiscal year ending December 31 2013	2014 (thousand metric tons)	2015
Metallurgic coal:				
Vale Australia				
Integra Coal(1)(4)	Underground and open pit	1,410	715	
Isaac Plains(2)	Open pit	656	746	
Carborough Downs(3)	Underground	2,447	1,857	2,383
Vale Moçambique				
Moatize(5)	Open pit	2,373	3,124	3,401
Total metallurgic coal		**6,885**	**6,443**	**5,784**
Thermal coal:				
Vale Australia				
Integra Coal(1)	Open pit	87	92	
Isaac Plains(2)	Open pit	347	326	
Vale Moçambique				
Moatize(5)	Open pit	1,444	1,784	1,560
Total thermal coal		**1,878**	**2,202**	**1,560**

(1) These figures correspond to Vale s interest of 64.8% in Integra Coal, from the sale of Vale s share in December 2015

(2) These figures correspond to Vale s interest of 50.0% in Isaac Plains, from the sale of Vale s share in November 2015 a joint venture constituted as a partnership.

(3) The figures for 2013 and 2014 correspond to Vale s interest of 85.0% in Carborough Downs. Vale s interest in Carborough Downs increased to 90% in December 2014. The figures for 2015 correspond to Vale s interest of 90% in Carborough Downs.

(4) Operations at Integra Coal and Isaac Plains are suspended since May and November 2014, respectively, and Vale s share in each mine, as well as respective assets, was sold in December and November 2015,

respectively

(5) These figures refer to 100% production at Moatize, and are not adjusted to reflect Vale s portion.

3.3 Clients and sales

Coal sales at Vale s operations in Australia are basically geared towards the Eastern Asian market. The coal sales from its Moatize operations, in Mozambique, aim global steel and power markets, including Asia, India, Africa, Europe and Americas. Vale s Chinese coal joint ventures directed their sales to the Chinese market.

3.4 Competition

The global coal industry, basically made up by the hard coal (metallurgical and thermal) and brown / lignite coal markets, is highly competitive.

The demand for steel, particularly in Asia, continues to promote a strong demand for metallurgical coal, while the power demand supports the demand for thermal coal. Vale expects a strong supply and lower prices for metallurgical coal in the coming years, reducing investments in greenfield projects, which may cause unbalance in the long term supply. Port and railroad limitations in some production areas, which cannot be solved without significant capital investment, may lead to a limited availability of additional metallurgical coal.

Competition in the coal industry is based mostly in production cost savings, coal quality, and transportation cost. Vale s main competitive advantages are ownership of a new and competitive transportation corridor, proximity compared to the Atlantic and Indian markets (compared to its main competitors) and the size and quality of Vale reserves.

The main participants in the transoceanic coal market are subsidiaries and affiliates and joint ventures BHP Billiton, Glencore Xstrata, Anglo American, Rio Tinto, Teck Cominco, Peabody, Walter Energy, and Shenhua Group, and others.

Table of Contents

4. Fertilizers

3.1. Phosphates

Vale operates its phosphate business through its subsidiary and joint venture, as presented in the table below.

Firm	System	Our participation (%) Voting	Total	Our partners
		(%)		
Vale Fertilizantes	Uberaba, Brazil	100.0	100.0	
Compañia Minera Miski Mayo S.R.L., located in Bayóvar, Peru.	Bayóvar, Peru(1)	51.0	40.0	Mosaic, Mitsui & Co.

(1) Vale s share in Compañia Minera Miski Mayo S.R.L. is held through MVM Resources International B.V.

Vale Fertilizantes is a company that produces phosphate rock, phosphate fertilizers (P), (e.g. monoammonium phosphate (MAP), dicalcium phosphate (DCP), triple superphosphate (TSP) and single superphosphate (SSP)) and nitrogen (N) fertilizers (e.g., ammonia and ammonium nitrate). It is the largest producer of phosphate and nitrogen crop nutrients in Brazil. Vale Fertilizantes operates the following phosphate rock mines by means of concessions for undetermined term: Catalão, in the State of Goiás, Tapira and Patos de Minas and Araxá, in the State of Minas Gerais, and Cajati, in the State of São Paulo, all in Brazil. In addition, Vale Fertilizantes has nine processing plants for the production of phosphate and nitrogen nutrients located in Catalão, Goiás; Araxá, Patos de Minas, and Uberaba, all located in the state of Minas Gerais; Guará, Cajati, and three plants in Cubatão, all located in the state of São Paulo.

Table of Contents

Since 2010, Vale also operates the Bayovar phosphate rock, in Peru, with nominal production capacity of 3.9 Mtpa, by means of one concession for undetermined term.

The following table contains information regarding Vale s phosphate rock production.

		Fiscal year ending December 31		
Mine	**Type**	**2013**	**2014**	**2015**
			(million metric tons)	
Bayóvar	Open pit	3,546	3,801	3,881
Catalão	Open pit	1,057	1,055	1,000
Tapira	Open pit	1,869	2,055	1,970
Patos de Minas	Open pit	53	73	23
Araxá	Open pit	1,111	883	707
Cajati	Open pit	640	605	581
Total		**8,277**	**8,421**	**8,163**

(1) Operations in Pato de Minas was suspended in the third quarter in 2015 due to market conditions.

The following table contains information regarding Vale s production of phosphate and nitrogen nutrients.

	Fiscal year ending December 31		
Product	**2013**	**2014**	**2015**
		(million metric tons)	
Monoammonium phosphate (MAP)	1,128	1,065	1,097
Triple superphosphate (TSP)	905	910	866
Single superphosphate (SSP)	2,102	1,854	1,953
Bicalcium phosphate (DCP)	444	502	480
Ammonia(1)	347	178	138
Urea(2)	219	0	
Nitric acid	416	469	475
Ammonium Nitrate	419	485	515

(1) After the sale of Araucária in June 2013, Vale produces ammonia only in the plant in Cubatão.

(2) After the sale of Araucária in June 2013, Vale no longer produces urea.

4.2 Potash

Vale s potash operations are concentrated in Brazil and are carried out by the group comptroller, Vale S.A., at the parent-company level, by means of mining concessions for undetermined term. Vale entered a leasing agreement for Taquari-Vassouras, the only potash mine in Brazil (in Rosario do Catete, in the State of Sergipe), with Petrobras since 1992. In April 2012, Vale extended the concession for other 30 years. The following table sets forth information on Vale s production of potash:

Mine	Type	Fiscal year ending December 31			Process Recovery in 2015 (%)
		2013	2014	2015	
		(Thousands of metric tons)			
Taquari-Vassouras	Underground	492	492	481	82.9

4.3 Clients and sales

All potash sales from the Taquari-Vassouras mine are to the Brazilian market. In 2015, Vale sales represented close to 5% of total potash delivered in Brazil. Vale has a presence and long-standing relationships with the major players in Brazil, with more than 50% in 2015 of the sales allocated to four traditional clients.

Vale s phosphate products (MAP, TSP, SSP) are sold mainly to the fertilizer industry. In 2015, Vale sales represented near 31% of the total phosphate delivered in Brazil. In the high concentration segment, Vale s production represented 86% of the total production in Brazil in 2015. In the low phosphate concentration nutrients segment, Vale s production represented near 38% of total consumption in Brazil with products like SSP in 2015.

Table of Contents

Vale s nitrogen segment produces 100% of the ammonia nitrate produced in Brazil. In addition, Vale is a global leading supplier of explosive ammonia nitrate in the Brazilian market.

4.4. Competition

The industry is divided into three major groups of nutrients: potash, phosphate and nitrogen. There are limited resources of potash around the world with Canada, Russia and Belarus being the main suppliers, each one with a small number of producers. The industry presents a high level of investment and requires long time for a project to mature. In addition, the potash segment is highly concentrated, with five major producers holding over 69% of the total global production capacity.

Phosphate rock is more accessible, but major exporters are located in Morocco, Algeria, Jordan, Egypt, and Peru. The five major producers of phosphate rock (China, Morocco, United States, Russia, and Jordan) hold 78% of global production in 2015, of which around 10% is exported. However, products with greater added value, such as MAP and DAP are usually marketed instead of phosphate rock, due to cost-benefit relationship.

Brazil is one of the largest agribusiness markets in the world due to its high production, exportation and consumption of grains and biofuel. It is the fourth-largest consumer of fertilizers in the world and one of the largest importers of phosphates, potash, and nitrogen. Brazil imports 95% of its consumed potash, which corresponded approximately to 5.1 Mtpa of K2O (potassium oxide) in 2015, 8% less than in 2014, from Canadian, Belarussian, Russian, German, and Israeli producers, in descending order. In terms of global potash consumption, China, the United States, Brazil, and India represented approximately 58% in 2015, where Brazil was responsible for 14% of this total global consumption. Vale s operations and fertilizer projects are highly competitive in terms of cost and logistics to meet the demand in the Brazilian market.

Most phosphate rock concentrate is consumed locally by downstream integrated producers, in the phosphate chain, with the seaborne market correspond in 2015 to 14% of total phosphate rock production. Major phosphate rock exporters are concentrated in Northern Africa, mainly through State-owned companies, with the Moroccan OCP Group, holding in 2015 29% of the total seaborne market. The phosphate rock seaborne trade supplies non-integrated producers of phosphate fertilizers such as SSP, TSP and MAP. Brazil imports 54% of the total phosphate needed, approximately 2.6 Mtpa of P2O5 equivalent (phosphate pentoxide) in 2015, 17% less than in 2014, and the main producers are Morocco, Russia, United States, and China, in descending order. Vale s phosphate operations are highly competitive in terms of cost and logistics to supply the Brazilian market.

Table of Contents

Nitrogen-based fertilizers are basically derived from ammonia (NH3), which, in turn, is produced from the nitrogen that is present in the air and in natural gas, making it a nutrient with high level of energy. Ammonia is the main component of nitrogen-based fertilizers, as well as ammonia nitrate and urea. The production of nitrogen-based fertilizers presents a regional profile due to the high cost associated with transportation and storage of ammonia, which requires refrigerated and pressurized facilities. Consequently, in 2015, only 10% of ammonia produced in the world is traded in global markets. Asia receives the largest volume of imports, with 34% of the global market. Major exporting countries are Russia, Trinidad y Tobago, and Canada. Nitrogen operations are highly competitive in terms of cost and logistics to supply the Brazilian market.

5. Infrastructure

5.1. Logistics Services

Vale has developed its logistics business based on the transportation needs of its mining operations, while Vale also provides transportation services for other customers.

Vale conducts its logistics businesses at the parent-company level, through subsidiaries, affiliates, and joint ventures, as set forth in the following table.

Company	Business	Location	Our participation (%)		Partners
			Voting	Total	
Vale	Railroad (EFVM and EFC), port, and maritime operations	Brazil			
VLI (1)	Port, maritime and railroad operations in land terminals. Holding general cargo assets.	Brazil	37,6	37,6	FI-FGTS, Mitsui and Brookfield
MRS	Railroad operations	Brazil	47.1	48.2	CSN, Usiminas Participações e Logísticas and Gerdau
CPBS	Port, maritime and railroad operations	Brazil	100.0	100.0	
PTVI PTV	Port, maritime and railroad operations	Indonesia	59.3	59.3	Sumitomo, public investors
Vale Logística Argentina	Maritime operations.	Argentina	100.0	100.0	
CEAR(2) (4)	Railroad.	Malawi	43.4	43.4	Mozambique, P.E. ports and railroads
CDN(3) (4)	Maritime and railroad operations.	Mozambique	43.4	43.4	Mozambique, P.E. ports and railroads
CLIN		Mozambique	80.0	80.0	

	Maritime and railroad operations				Mozambique, P.E. ports and railroads
Vale Logistics Limited	Railroad operations.	Malawi	100.0	100.0	
Transbarge Navigación	River system in Paraguai and Paraná rivers (Comboios).	Paraguay	100.0	100.0	
VNC	Port and maritime terminal operations	New Caledonia	80,5	80,5	Sumic, SPMSC
VMM	Port and maritime terminal operations	Malaysia	100,0	100,0	
Vale Newfoundland & Labrador Limited	Port operations	Voisey s Bay and Long Harbour, in Newfoundland and Labrador	100	100	
Vale Oman Distribution Center LLC	Port and maritime terminals operations	Oman	100	100	

(1) *BNDES holds debentures issued by Vale, exchangeable in part to Vale s share in VLI. If BNDES exercises its right on these debentures, Vale s share in VLI will be reduced by 8%*

(2) *Vale holds control of its participation in CEAR through 85% interest in SDCN, holding 51% of CEAR.*

(3) *Vale holds control of its participation in CDN through 85% interest in SDCN, holding 51% of CDN.*

(4) *Upon conclusion of transactions with Mitsui, Vale held 21.7% of the voting capital of CEAR, 21.7% of the voting capital of CDN, 40% of the voting capital of CLN, and 50% of the voting capital of VLL.*

(5) Upon conclusion of the sale of its share in Sumic of 10.5% in VNC for Vale in March 2016, Vale will hold 95% of VNC shares.

Table of Contents

5.1.1. Railroads

- Brazil

- Vitória a Minas railroad (EFVM). The EFVM railroad links Vale s Southeastern System mines in the Iron Quadrangle region in the State of Minas Gerais to the Tubarão Port, in Vitória, in the State of Espírito Santo. Vale operates this 905 km railroad under a 30-year renewable concession, which expires in 2027. The EFVM railroad consists of two lines of track extending for a distance of 601 km to permit continuous railroad travel in opposite directions, and single-track branches of 304 km. Industries are located in this area and major agricultural regions are also accessible to it. VLI holds rights to use the railroad transportation capacity at Vale s EFVM line. In 2015, EFVM carried daily an average of 341,6 metric tons of iron ore, or a total of 80.2 billion ntk of iron ore and other cargo. The EFVM railroad also carried 967 thousand passengers in 2015. On December 31, 2015, Vale had a fleet of 333 locomotives and 15,263 wagons at EFVM.

- Carajás railroad (EFC). The EFC railroad connects Vale s mines in the Northern System in the Carajás region in the State of Pará to the maritime terminal Ponta da Madeira, in São Luís, in the State of Maranhão. Vale operates the EFC railroad under a 30-year renewable concession, which expires in 2027. EFC extends for 892 km from mines in Carajás to the Ponta da Madeira maritime terminal located near the Itaqui Port. Its main cargo is iron ore, principally carried mainly for the Company. VLI holds rights to use the railroad transportation capacity at Vale s EFC line. In 2014, EFC carried daily an average of 319,0 metric tons of iron ore. In 2015, the EFC railroad carried a total of 120.3 billion ntk of iron ore and other cargo. EFC also carried 301 thousand passengers in 2015. EFC supports the largest capacity train in Latin America, which measures 3.5 km, weighs 42,01 gross metric tons when loaded and has 330 cars. In 2015, EFC had a fleet of 284 locomotives and 17,125 wagons.

The principal items of cargo of the EFVM and EFC railroads are:

- Iron ore, iron ore pellets, and manganese ore, carried for the Company and its customers;

- Steel, coal, pig iron, limestone and other raw materials carried for customers with steel mills located along the railroad;

- Agricultural products, such as grains, soybean meal and fertilizers; and

- Other general cargo, such as pulp, fuel and chemical products.

Vale charges market prices for customer freight, including iron ore pellets originating from joint ventures and other enterprises in which Vale does not have 100% equity interest. Fees vary based on the distance traveled, the type of product transported and the weight of the freight in question, and are regulated by the Brazilian transportation regulatory agency, the Agência Nacional de Transportes Terrestres (ANTT).

Table of Contents

VLI provides logistic integrated solutions through 7,920 km of railroads in Brazil (Centro-Atlântica Railway and Norte-Sul Railway), eight land terminals with total capacity of storage of 730,000 tons and three maritime terminals and port operations. Vale holds 37.6% interest in VLI and is party in a shareholders agreement with FI-FGTS, Mitsui, and Brookfield, which hold the remaining shares of VLI.

Main assets owned by VLI are:

- Centro-Atlântica Railway. Central-east regional railway network of the Brazilian national railway system under a 30-year renewable concession, which expires in 2026. The central east network has 7,220 km extending into the States of Sergipe, Bahia, Espírito Santo, Minas Gerais, Rio de Janeiro, Goiás and the Federal District.

- Norte-Sul Railway. A 30-year renewable sub concession for commercial operation of a 720 km stretch of the North-South railroad, in Brazil, between the cities of Acailandia, in the State of Maranhão, and Porto Nacional, State of Tocantins. This railroad is connected to EFC, creating a new corridor for the transportation of general cargo, mainly for the export of soybeans, rice and corn produced in the center-northern region of Brazil.

- The right to use the carrying capacity in Vale railroads, EFVM and EFC for general cargo; and

- The right to use the carrying capacity in Vale terminals, Tubarão and Praia Mole for general cargo.

In 2015, VLI carried a total of 34.8 billion tku load, including 21.3 billion tku of Centro-Atlântica Railway and Norte-Sul Railway and 13.5 billion tku through Vale s operational agreements.

Additionally, Vale holds direct and indirect interest in MRS Logística S.A. (MRS), company that holds the concession to operate the railroad connecting the States of Rio de Janeiro, São Paulo and Minas Gerais, which is 1,643 km-long. In 2015, the MRS railroad carried a total of 167 million metric tons of cargo, including 80.7 million metric tons of iron ore and other cargo from Vale.

- Africa

The Nacala logistic corridor, currently in the ramp up phase, connects the Moatize mine to the Nacala-à-Velha maritime terminal, located in Nacala, Mozambique, crossing the Republic of Malawi. The Nacala corridor is a railroad and a port infrastructure, including greenfield areas and remodeling railroads existing in Mozambique and Malawi and a new maritime terminal for coal in Mozambique. The Nacala Corridor will allow the Moatize mine expansion and will offer support to Vale s operations in the Southern Africa. In Mozambique, Vale operates under two concession agreements, one related to the new Mozambican railroad and the other related to the recently-built coal port, both maintained by Vale s subsidiary Corredor Logístico Integrado de Nacala S.A. (CLN), which mature in 2042, subject to extensions. In addition, Vale is refurbishing existing railroads under the concession granted by Vale s subsidiary Corredor de Desenvolvimento do Norte S.A. (CDN), which matures in 2035. In Malawi, Vale operates under the concession held by its subsidiary Vale Logistics Limited (VLL), which matures in 2044, subject to extensions. Vale is rehabilitating existing railroads under the concession held by its subsidiary Central East African Railway Company

Limited (CEAR), which was extended to 2013, with automatic renewal for a 30-year period starting from the beginning of railroad services under greenfield concession of VLL railroad.

Table of Contents

In December 2014, Vale entered into an investment agreement under which Mitsui acquired Vale s share in the Nacala Corridor. Vale s indirect interest in CLN, CDN, VLL and CEAR will be transferred to a controlling company jointly held (50% each) and controlled by Vale and Mitsui. Mitsui will invest US$ 313 million on this controlling company, in *equity* and *quasi-equity instruments*. Vale and Mitsui are looking for project funding to replace part of the funds application provided by Vale. The transaction is subject to certain conditions precedent and the closure is expected to 2016.

5.1.2. Ports and maritime terminals

- Brasil

Vale operates a port and maritime terminals principally as means to conclude the delivery of its iron ore and pellets to bulk carrier vessels serving the seaborne market. For more information, see item 1.1 Iron Ore and Pellets in this section of the Reference Form. Vale also uses its port and terminals to handle customers cargo.

Tubarão Termina. The Tubarão Terminal, which covers an area of approximately 18 square kilometers, is located in the city of Vitória, in the State of Espírito Santo, and contains: the iron ore maritime terminal and general cargo terminals (the Terminal de Granéis Líquidos and the Terminal de Produtos Diversos).

- The Iron Ore Maritime Terminal has two piers. Pier I can maintain two anchored vessels at a time, one of up to 170,000 DWT on the southern side and one of up to 210,000 DWT on the northern side. Pier II can accommodate one vessel of up to 405,000 DWT at a time, limited at 23 meters draft plus tide. In Pier I, there are two ship loaders, which can load up to a combined total of 13,500 metric tons per hour each. In Pier II there are two ship loaders that could work alternately and can each load up to 16,000 metric tons per hour continuously. In 2015, Vale shipped 105.4 million metric tons of iron ore and pellets through the terminal. The iron ore maritime terminal has a storage yard capacity of 3.4 million metric tons.

- Terminal de Produtos Diversos handled 8.1 million metric tons of grains and fertilizers in 2015. VLI is entitled to use the capacity of the Terminal de Produtos Diversos.

- Terminal de Granéis Líquidos handled 614.6 thousand metric tons of fuel in 2015. VLI is entitled to use the capacity of the Terminal de Granéis Líquidos.

Terminal de Praia Mole. This is basically a coal terminal and held 12,3 million metric tons of coal in 2015. VLI is entitled to use the capacity of the Terminal de Praia Mole.

Terminal Marítimo de Ponta da Madeira. The Terminal Marítimo de Ponta da Madeira is located in the city of São Luís, State of Maranhão. Pier I can accommodate vessels displacing up to 420,000 DWT and has a maximum loading rate of 16,000 tons per hour. Pier III, with two berths and three ship loaders, can accommodate vessels of up to 200,000 DWT on the south berth and 180,000 DWT on the north berth or two 180,000 DWT ships simultaneously), depending on tide conditions, with maximum loading rate of 8,000 metric tons per hour in each. Pier IV (south berth) can accommodate vessels displacing up to 420,000 DWT and two ship loaders operating alternately with maximum loading rate of 16,000 tons per hour. Cargo shipped through Vale s Ponta da Madeira maritime terminal consists of its own iron ore production and manganese. In 2015, 124.7 million metric tons of iron were handled through the terminal. The Ponta da Madeira maritime terminal has a storage yard with capacity of 8.9 million metric tons, to be expanded to 10.7 million metric tons. VLI currently stores and operates with fertilizers, grains, pig iron and manganese ore, which are shipped through the Port of Itaqui.

Table of Contents

Terminal Marítimo de Itaguaí Cia. Portuária Baía de Sepetiba (CPBS). CPBS is a wholly owned subsidiary that operates the Itaguaí terminal, in the Port of Itaguaí, in Sepetiba, State of Rio de Janeiro, leased from Companhia Docas do Rio de Janeiro. Itaguaí s maritime terminal has docks that allow the loading of ships up to 17.8 meters of draft and up to 200,000 DWT. In 2015, the terminal loaded approximately 22.0 million metric tons of iron ore.

Terminal Marítimo de Ilha Guaíba. Vale operates a maritime terminal on Guaíba Island in the Sepetiba Bay, in the State of Rio de Janeiro. The iron ore terminal has a pier (with two branches) that allows the loading of ships of up to 350,000 DWT. In 2015, the terminal loaded approximately 47.3 million metric tons of iron ore.

VLI also operates the Terminal Marítimo *Inácio Barbosa (TMIB* ., owned by Petrobras, in the State of Sergipe; the Maritime Terminal TIPLAM, in the State of São Paulo, owned jointly by VLI and Vale Fertilizantes; and Pier II in the port of Itaqui, that can receive vessels of up to 155,000 DWT with load rate of a maximum of 8,000 tons per hour.

- Argentina

Vale Logistica Argentina S.A. (Vale Logistica Argentina) operates a terminal at the San Nicolas port located in the province of Buenos Aires, Argentina, where it has been authorized to use a 20,000 square meters storage yard until October 2016 and has executed an agreement with unrelated parties to an additional 15,000 square meters storage yard. Vale handled 2.7 million metric tons of iron ore and manganese through this port in 2015, from Corumbá, Brazil, and carried through the Paraná and Paraguay rivers to be transported to Brazilian, Asian and European markets. The loading rate at this port is 24,000 tons per day and unloading rate of 13,200 tons per day.

- Canada

Vale Newfoundland and Labrador Limited operates a port as part of its mining operations in Voisey s Bay, Labrador, and a port as part of its processing operations in Long Harbour, Newfoundland. The port in Voisey s Bay is used to ship nickel and copper and to refilling. The port in Long Harbour is used to receive nickel concentrate from Voisey s Bay with goods and materials required to operate Long Harbour.

- Oman

Vale Oman Distribution Center LLC operates a distribution center in Liwa, Oman. The maritime terminal has a large deep water pier, a 600-m long platform connected to the beach by a 700-m long bridge, which is integrated to a storage Yard with movement and processing capacity of 40 Mtpa of iron ore and pellets per year. The nominal loading capacity of this port is 10,000 tons/hour and nominal unloading of 9,000 tons/hour.

241

Table of Contents

- Indonesia

PTVI owns and operates two ports in Indonesia to support its nickel mining activities.

- The Balantang Special Port is located in Balantang Village, in the South Sulawesi, and has two types of piers with total capacity of 10,000 DWT: two resources for barges of up to 4,000 DWT each for bulk dry volume and a dock for general cargo of up to 2,000 DWT.

- The Harapan Tanjung Mangkasa Special Port is located in Lampia Village, in the South Sulawesi, with armoring buoys that can accommodate vessels displacing up to 20,000 DWT, and a terminal that can accommodate fuel tankers with displacing up to 2,000 DWT, with total capacity of 22,000 DWT. Recently the 2,000 terminal was expanded to increase the capacity in 5,000 DWT, and it is expected to be in use in June 2016. By July 2016, Tanjung Mangkasa should have total capacity of 25,000 DWT.

- New Caledonia

Vale has and operates a port in Prony Bay, South Province, New Caledonia. This port has three terminals, including a passenger boat terminal for two vessels of up to 50 meters, a dock for dry bulk material for vessels of up to 55,000 DWT to unload at 8,000 tons a day and a general cargo dock for vessels of up to 215 meters. The general cargo dock can receive containers at 10 units per hour, liquid fuels (GLP, BPF, Diesel) at 350 cubic meters per hour, and *break-bulk*. The containers patio, a covered area of about 13,000 square meters, can receive up to 1,000 units. A bulk storage patio is linked to the port by a belt with storage capacity of 94,000 tons of limestone, 95,000 tons of sulfur and 60,000 tons of coal.

- Malaysia

The Maritime Terminal Teluk Rubiah (TRMT) is located in the State of Perak, Malaysia, and has one dock and two moors that allow unloading vessels with approximate capacity of 400,000 DWT and loading ships with capacity of up to 220,000 DWT. In 2015, the terminal unloaded 15.2 million metric tons of iron ore and loaded 14.2 million metric tons of iron ore.

5.1.3. Navigation

Vale continued to develop and operate a low cost fleet of vessels, comprised of company-owned vessels and freight vessels through mid and long-term lease agreements, to carry its cargo from Brazil to its markets. Vale has 18 vessels in operation, including seven Valemax vessels, with capacity of 400,000 DWT, and other 9 capesize vessels, with capacities varying between 150,000 to 250,000 DWT. Vale also operates 27 Valemax vessels under long-term agreements. To support its strategy to deliver iron ore, Vale holds and operates 2 floating transfer stations in the Subic Bay, in the Philippines, that transfers iron ore from Valemax vessels to smaller vessels that deliver the cargo to its destination. With this service, the Company expects to improve its ability to offer iron ore products to the Asian market at competitive prices. In 2015, Vale carried approximately 188 million metric tons of iron ore and pellets on CFR and Cost, Insurance, and Freight (CIF) basis.

In 2014 and 2015, Vale entered into cooperation agreements for the transportation of iron ore with carriers and financial institutions, located in China and in Hong Kong. Under these agreements, Vale (i) sold 12 of its 400,000 Valemax vessels for an aggregate value of US$ 1,316 billion in December 2015, and (ii) negotiated long-term chartering agreements with Chinese shipbuilders to guarantee long-term loading capacity to transport iron ore from Brazil to Asia and protect Vale against the volatility of freight costs. In addition, Vale sold three ore carrying ships for approximately US$ 23 million in 2015.

Table of Contents

On the Paraná and Paraguay fluvial system, Vale carried iron ore and manganese through its subsidiary, Transbarge Navigacion, which transported by rivers 3.86 million tons in 2015 and (ii) other chartered vessels. Barges are unloaded at the terminals of Vale local clients at contracted terminals in Argentina or at the facilities of its subsidiary, Vale Logistica Argentina, which carries ore in ocean vessels. Vale Logística Argentina carried 2.1 million tons of ore (out of a total capacity of 3 million tons) though the port of Saint Nicolas in seaborne vessels in 2015.

Vale manages a fleet with 25 tugboats, owning 25 vessels. Vale directly operates nine tugboats in the ports of Vitória and Mangaratiba, in the States of Espírito Santo and Rio de Janeiro, respectively. Four tugboats in the port of São Luis and Aracaju, in the States of Maranhão and Sergipe, respectively, are operated by consortium companies, in which Vale holds 50% interest. Other ten tugboats are freighted to and operated by third parties, under their responsibility, in other ports in Brazil.

5.1.4. Energy

Vale manages its power generation portfolio based on the current and projected energy needs of its operations, with the goal of reducing energy costs and minimizing the risk of energy shortages.

- **Brazil**

Energy management and efficient supply in Brazil are priorities for Vale, given the uncertainties associated with changes in the regulatory environment, and the risk of rising prices. In 2015, Vale s total installed energy capacity in Brazil was 1.2 GW. Vale uses the electricity produced by these plants for its internal consumption needs. Vale currently has direct interest in three hydroelectric power plants and four small-sized hydroelectric plants in operation. The hydroelectric power plant Candonga in located in the Southeast, Machadinho is located in the South, Estreito is located in the North. The small-sized hydroelectric power plants Ituerê, Melo, Glória and Nova Maurício are located in the Southeast. Vale also has indirect interest in the hydroelectric power plants of Igarapava, Porto Estrela, Funil, Candonga, Aimorés, Capim Branco I, and Capim Branco II, through its 55% share in Aliança Geração. These hydroelectric power plants are located in the Southeast and part of the power generated is directed to Vale operations under a power purchase contract with Aliança Geração.

By means of Vale s subsidiary Aliança Norte Energia Participações S.A., Vale indirectly holds 4.59% of the stocks in Norte Energia S.A. (NESA), a company incorporated with the sole purpose of deploying and operating the Belo Monte Hydroelectric Plant, in the State of Pará, which shall start operations in the first quarter in 2016. Vale s interest in the Belo Monte project grants it the right to acquire 9% of the power generated by the plant, under a long term power purchase agreement, signed in 2012. For more information on this operation, see item 15.7 in this Reference Form.

Vale also produces, through its subsidiary Biopalma da Amazônia S.A. (Biopalma), palm oil in the State of Pará, with the main purpose of producing biodiesel, in the future, through an extraction plant to be installed by Biopalma. Biodiesel will be mixed with regular diesel to produce a fuel known as B20 (with 20% biodiesel), to be used in Vale s fleet of locomotives, trucks, and heavy machinery used in operations of the North System.

Table of Contents

- **Canada**

In 2015, Vale s hydroelectric power plants in Sudbury generated 17% of the electricity requirements of Vale s operations in Sudbury. The power plants consist of five separate generation stations with an installed capacity of 56 MW. The output of the plants is limited by water availability, and by restrictions imposed by a water management plan regulated by the Government of the Province of Ontario. In 2015, the average requirements for power was 195 MW to all surface plants and mines in the Sudbury area.

In 2015, diesel generation provided 100% of the electric requirements of Vale s operations in Voisey s Bay. Vale has six diesel generators on-site, with capacity varying from 12 MW to 14 MW, for purposes of meeting seasonal demands.

- **Indonesia**

Energy costs are a significant component of Vale s nickel production costs for the processing of saprolitic lateritic ores at PTVI operations in Indonesia. A great portion of the PTVI s electric furnace power requirements are supplied at low-cost by its three hydroelectric power plants located in the Larona River: (i) the Larona plant with average generation capacity of 165 MW, (ii) the Balambano plant with average generation capacity of 110 MW; and (iii) the Karebbe plant with average generation capacity of 90 MW. These plants help reducing the costs by replacing the diesel used in power generation for hydroelectric power, reducing CO2 emissions, replacing non-renewable power generation, which allow Vale to increase current nickel production capacity in Indonesia.

6. Other Investments

Vale holds 25% in iron ore pelleting plants in China: Zhuhai YPM and Anyang. The remaining shares of Zhuhai YPM are held by Zhuhai Yueyufeng Iron and Steel Co. Ltd. and Halswell Enterprises Limited, while the remaining shares of Anyang are held by Anyang Iron & Steel Co., Ltd.

Vale holds 25% interest in coal operations in China, in Longyu (Henan Province). Longyu produces metallurgic and thermal coal and other related products, and the remaining capital is held by Yongmei Group Co., Ltd. (formerly known as Yongcheng Coal & Electricity (Group) Co. Ltd.), Shanghai Baosteel International Economic & Trading Co., Ltd. and other minor shareholders. Vale also held a 25% share in Shandong Yankuang International Coking Company Limited (Yankuang), Chinese joint-venture that produces metallurgic coal coke, methanol, tar oil, and benzene, and the remaining shares are held by Yankuang Group Co. Ltd. and Itochu Corporation. However, on December 15, 2014, Vale executed an agreement with Itochu Corporation to sell its share in Yankuang to the Yankuang Group for the total amount of US$1.00 (one real). This sale was approved by the Chinese government on March 30, 2015 in order to have Vale and Itochu Corporation out of said *joint venture*, and the sale of the interest held by Vale and by Itochu Corporation in Yankuang to the Yankuang Group was considered concluded on this date.

Vale holds indirect interest of 25% in Korea Nickel Corporation, which operates a nickel refinery in South Korea. The remaining shares are held by Korea Zinc Co., Ltd., Posteel Co., Ltd., Young Poong Co., Ltd., Pohang Technology College and other individual investors. Korea Nickel

Corporation produces end nickel for the stainless steel industry using intermediate products from Vale operations in Matsuzaka and New Caledonia.

Vale owns 50.0% of capital stock of California Steel Industries, Inc. (CSI), a producer of flat rolled steel and pipes, located in California, in the United States. The remaining 50% belongs to JFE Steel. CSI s annual production capacity is of about 2.8 million metric tons of flat products and pipes. Additionally, Vale holds a 26.9% stake in ThyssenKrupp Companhia Siderúrgica do Atlântico (TKCSA), an integrated producer of steel plates located in the State of Rio de Janeiro. The plant was commissioned in 2010, and produced 4.0 Mt in 2015. The final production capacity of TKSCA is 5.0 Mtpa of plates and will require 8.5 million metric tons per year of iron ore and pellets, while working in full capacity, supplied exclusively by Vale.

Table of Contents

Vale is also engaged in two other steel projects in Brazil: Companhia Siderúrgica do Pecém (CSP), which is being constructed, and Aços Laminados do Pará (Alpa), which is under analysis considering discussions with the Brazilian government.

Additionally, Vale holds minor interest in two bauxite mining companies, both in Brazil: Mineração Rio do Norte S.A. (MRN) and Mineração Paragominas S.A. (Paragominas), and Vale has agreed upon transferring Vale s interests in Paragominas to Norsk Hydro ASA (Hydro). In 2014, Vale sold part of its interest in Paragominas to Hydro and expects to conclude the sale of its indirect 13.63% share to Hydro in 2016.

Vale has agreed upon selling its hydrocarbon on-shore exploration license in Peru, subject to regulatory approvals. Vale also holds licenses for off-shore exploration in Brazil, which are abandoned, subject to regulatory approvals.

e. Key consumables and raw materials:

i. Description of the relationships with suppliers, including whether they are subject to governmental control or regulation, identifying the institutions and applicable legislation

Vale is committed to build a sustainable business model and contribute to a just, environmentally balanced and economically prosperous society. Vale adopts the strategy in relation to its suppliers to maintain a long-term relationship in order to promote partnerships aimed at gains for both parties, through continuous innovation and development and supply of goods and quality services at a compatible cost.

In order to achieve continuous improvement and contribute to advances in the production chain, the management of relationships with its suppliers comprises the following steps:

(i) Certification and registration of suppliers based on Vale s values, taking into account also the identification and analysis of supply risks (environmental, institutional, labor, social security, financial, health and safety, ethics, and social responsibility);

(ii) Third party Due Diligence aiming to mitigate reputation risks, arising out of eventual engagement by Vale s commercial partners with events that violate human rights or anticorruption laws applicable to Vale, as the *Foreign Corrupt Practices Act FCPA* and the *UK Bribery Act* and the Brazilian law against corruption (Federal Law no. 12.846, dated August 1, 2013);

(iii) Monitoring the financial health of Vale s main suppliers of material, equipment, and services;

(iv) Periodic performance evaluations to ensure compliance with applicable requirements and as defined in the contracting stage, as well as adherence to agreement expectations;

(v) Development and support in suppliers training; and

(vi) Promotion and prospection of new suppliers.

Table of Contents

Under the UN s Universal Declaration of Human Rights, Vale respects and promotes human rights in its activities, through its production chain and in regions where the Company operates.

In this sense, Vale aims to establish commercial relationships with suppliers who share its principles and values and who respect human rights.

Vale s principles and values are disclosed to its suppliers in its Supplier s Code of Ethics and Conduct, document signed by all the companies that have entered into a supply agreement with Vale. Note that this Code is available at the Company website (www.vale.com).

The suppliers agreements are preceded by a search in the list disclosed at the website of the Ministry of Labor and Employment (MTE) that includes individuals or legal entities found to be engaged in employing workers under slave work or analogous conditions and the list CEIS (National Registry of Suspected Companies) that lists companies with no good standing and suspended by the federal government. Other searches to public sanction lists may apply under specific circumstances.

The guidelines and criteria Vale adopts to evaluate its suppliers are based on the above mentioned environmental legal requirements applicable to suppliers whose operational processes involve the use of natural resources or are potentially polluting or likely to cause environmental degradation. In addition to these legal aspects, Vale s Environmental Management criteria and the principles of its Sustainable Development Policy are considered.

With regard to recipients of waste generated in Vale s production processes, they all are subject to audit by the Department of the Environment and Sustainable Development during their initial approval and periodic revalidation.

The main environmental laws applicable to this process are:

a) Environmental Permit

- Federal Law 6938/81 - National Environmental Policy
- CONAMA Resolution (National Council for the Environment) 237/97
- Complementary Law 140/11
- CONAMA Resolution (National Council for the Environment) 01/86.
- Federal Law 10165/00

- Federal Law 12651/12
- IBAMA (Brazilian Institute of Renewable Natural Resources) Normative Instructions 96/06 and 97/06.

b) Pesticides

- Federal Law 7802/99
- Federal Decree 4047/02
- Law 6360/76 - ANVISA - National Agency for Sanitary Surveillance

c) Transportation of Dangerous Goods

- Decree 96044/88
- ANTT Resolution (National Ground Transportation Agency) 420/02

d) Radioactive Material

- CNEN Resolution (National Nuclear Energy Council) NE 2.01
- CNEN Resolution (National Nuclear Energy Council) NE 5.02

e) Explosive Materials

- Federal Decree 3665/00

f) Controlled Chemicals

- Ministry of Justice Decree 1274/2003.

ii. Potential dependence on few suppliers

The main consumables purchased by Vale in 2015 were: liquid and solid fuels, tires, parts and components of mining equipment, railroad equipment. Moreover, the main rendering of services included equipment installation and assembly, installation repair maintenance and operational services, in project management.

Table of Contents

In 2015, the main categories of equipment purchased by the procurement division were comminution equipment and wagons. Vale s largest group of suppliers of these types of equipment are Sandvik and Qiqihar Railway Rolling Stock, accounting jointly for 3.2% of total purchases of Supplies in the period.

Fuel consumption is quite intense, especially in operations and transport of iron ore. Vale s main supplier of this consumable item is Petrobras Distribuidora, which accounted for approximately 80% of Vale s purchase of fuels in 2015.

In 2015, Vale used 59% of the electricity provided by self-production in Brazil and the remaining portion was consumed through purchase of power in the market, which main suppliers were Cemig, Eletronorte, and Enertrade.

The 10 largest input, equipment and service providers represented 22% of the total purchases by December 31, 2015.

iii. Possible volatility in their prices

Vale has some contracts where prices are pegged to market indexes (parametric formulas) and therefore subject to these volatilities. Prices can also vary in relation to historical prices depending on offer versus demand in the market at the time of competition. For information related to eventual volatility in Vale s product prices, see item 4.2 in this Reference Form.

7.4 Customers that accounted for more than 10% of total net revenues

In 2015, no customers accounted for more than 10% of Vale s net revenue.

7.5 Relevant effects of State regulation on the Company s activities

a. Need for government authorization for the exercise of activities and long-standing relationship with the government to obtain such permits

Vale is subject to a wide range of governmental regulations in all jurisdictions where Vale operates worldwide. The following discussion summarizes the regulations that have the most significant impact on Vale s operations.

Mining rights

Mining and mining processing are subject to strict regulations. In order to engage in such activities, usually, Vale must obtain government and private licenses that may include concessions, licenses, claims, leases, rents or permits (all referred to below as Concessions). The legal and regulatory regimes applicable to the mining sector and to government concessions differ among jurisdictions. In many jurisdictions, including in Brazil, mineral resources belong to the State and may only be extracted upon a government concession (see Regulation on mining activities). In other jurisdictions, as Ontario, Canada, a substantial part of Vale s mining operations is conducted pursuant to mining rights that Vale holds (private licenses). Governmental entities are generally responsible for granting mining concessions and monitoring compliance with mining laws and regulations.

The table below summarizes Vale s principal mining concessions and other similar rights.

Location	Concession or other right	Approximate area covered (in thousand hectares)	Expiration date
Brazil			
	Exploration Concession (including applications)	682,913	Undetermined
Canada(1)			
	Exploration Concession (name varies according to the province)	330,560	2016-2036
Indonesia (2)			
	Employment Agreement (*Contract of Work*)	118,435	2025
Australia			
	Exploration Concession (*Mining concessions*)	11,135	2021-2041
New Caledonia			
	Exploration Concession (*Mining concessions*)	21,269	2016-2051
Peru (3)			
	Exploration Concession (*Concesión de Exploración*)	199,398	Undetermined
Argentina (4)			
	Exploration Concession (*Manifestación de Descubrimiento*)	33,866	Undetermined

Table of Contents

Mozambique (5)			
	Exploration Concession (Mining Concession)	23.780	2032

(1) The maturity date of Vale leases in Sudbury is subject to the current renewal applications. The approval procedure is in progress, but it may take a few years.

(2) Entitled to two 10-year extensions subject to approval by the government of Indonesia. Concessions with no production have maturity dates between 2023 and 2028.

(3) The Peruvian mining regime includes only one type of license.

(4) Vale has returned part of its mining rights in Argentina, due to market conditions. Vale has paid and will continue paying its commitments related to potash concessions in Rio Colorado and will examine alternatives to increase perspectives in the project.

(5) Entitled to 25-year extensions subject to the approval by the Government of Mozambique.

In addition to concessions listed above, Vale holds exploration licenses and exploration applications covering 4.8 million ha in Brazil and 1.7 million ha in other countries.

Many concessions impose specific obligations on the concessionaire governing such matters as how operations are conducted and what investments are required. Vale s ability to maintain its mining rights depends on meeting these requirements, which often involve significant capital expenditures and high operating costs.

Regulation of mining activities

- *Brazil.* Mining activity in Brazil is currently ruled by the 1967 Brazilian Mining Code, which provides for different enjoinment regimes for mineral substances, which differ according to the mineral to be explored and the size of the Project to be developed. Currently, there are five mining enjoinment regimes, namely: Research Authorization, Concession, License Registry or Mining Licensing, Permission to Explore and Monopoly. The Federal Government has sent to the National Congress in June 2013, the proposal for a new Brazilian Mining Code, which is under discussion. This proposal includes, among others, maintenance of the main rights on mining licenses existing until the date of promulgation, a review on royalties, new regime for concessions for exploration for a period of up to 40 years (renewable for periods of up to 20 years) through bidding processes, and creation of a Mining Agency aiming to simplify the process to grant mining rights.

- *New Caledonia*. The mining law that passed in 2009 requires that new mining projects should obtain formal authorization from government authorities rather than a declaration, as required by the pervious legislation. Vale filed

a new license application updated in October 2015, and the official response is expected to be given in December 2016. Vale s existing mining license will remain valid and in force until the application is approved. Although Vale believes it is unlikely that the authorization application will be rejected, the governmental entities may impose new conditions regarding the authorization. Additionally, in 2014, local authorities of New Caledonia proposed the creation of a protected swamp zone covering 27% of the total area of VNC, with potential to affect mining activities. Part of this swamp zone is adjacent to the future waste deposit of VNC, which could raise the need of additional investments by Vale.

Environmental regulations

Activities, operations, products, services, and projects of Vale are subject to environmental regulations according to corresponding aspects. Such regulation requires environmental licenses, authorizations, and permits that compose of the environmental licensing process, which are based on the analysis and prior approval of several studies of the environmental impacts required by responsible entities, at different government levels. Likewise, at each significant change, alteration or expansion needed for activities, operations, products, services, and projects of Vale, information should be submitted to the appropriate environmental entities for purposes of ensuring legal conformity and obtaining, when needed, the issuance of a new authorization act or adjustment to the one issued in advance.

Authorization acts issued determine control, mitigation, compensation, and environmental management acts, considering parameters and other requirements that should be complied with by the Company during its operation, demanding specific investments for better adherence to processes, tasks, and equipment.

For purposes of improving the environmental licensing process, Vale has developed the Guide of Good Environmental Licensing Practices which sets forth (i) integration between the environmental area and other areas engaged in the project cycle, (ii) actions by fully-qualified technical teams, (iii) greater interaction with environmental entities, and (iv) deployment of an Executive Committee responsible for internal decisions.

Vale also invests in technological innovations and processes that result in solutions for more effective environmental issues. This not only offers improvement to the environmental performance, but also in opportunity for better competitive performance, considering the fact that the environmental regulation applies to all competitive companies, to the extent that such actions result in lower costs in the long term. For instance: (a) the *truckless* system that is being deployed at the Carajás S11D Iron Project, which dismisses the need to use off-road trucks to carry ore and sterile, with consequent reduction of the emission of greenhouse effect gases and particulate, diminished risks of accidents and running over fauna, as well as (b) deployment of water reuse, saving significantly while exploring this resource.

Table of Contents

The use of natural resources is widely protected by current laws and the company demand consider, without limitation, its environmental impact on hydric resources, ecosystems, hydrographic and aerial basins, natural underground cavities, forests, sea, coasts. The Brazilian legal system provides for the possibility of administrative, civil and criminal responsibility, with sanctions in case of non-compliance with the legislation. Regarding environmental civil liability, financial guarantees may be used in some cases, as in case of decommissioning of assets held by the Company and remediation of possible environmental liabilities arising out of these procedures.

Table of Contents

Legislation on Environmental Infringements

Environmental regulations that affect Vale relate, among other things, to: (a) air, soil, and water emissions; (b) recycling and waste management; (c) protection and preservation of forests, coasts, natural underground cavities, hydrographic basins and other characteristics of the ecosystem; (d) water usage; (e) financial provisions and plans needed since the mining license, covering climate change, decommissioning, and remediation of the affected area.

Federal Decree no. 6.514/2008, that deals with environmental infringements and regulates the Environmental Crimes Law (Federal Law no. 9.605/98), sets forth the infringements against the regulations to protect fauna, flora, related to pollution, urban organization and cultural heritage, environmental management, conservation units, and others.

Legislation on protected areas

Protection of forests and other vegetation forms is regulated by Federal Law no. 12.651/12, that created the new Forest Code and a set of federal, state and municipal regulations.

Federal Law 12.651/12 sets forth the obligation of owners or holders of rural properties to maintain a Legal Reserve area duly protected, which will vary according to the bioma where the rural property is located, and may be equal to 80% in the Legal Amazon area. In 2014, national deployment of the Rural Environmental Registry (CAR), which legal term for adherence by rural owners was for one year, extended for the same period with the publication of Order MMA no. 100/2015, therefore establishing the final registry deadline in May 2016.

The creation and protection of Conservation Units (UCs), in turn, are established in Federal Law 9.885/00, which sets forth the National Conservation Unit System (SNUC). UCs are governed by the creation decrees and management plans, and interferences within their limitations without approval of the applicable managing entity may characterize administrative infringement and cause application of penalties.

As counterpart to environmental impacts inherent to its businesses, Vale supports the deployment of UCs in Brazil, as the funds paid as environmental compensation, related to the license of projects with significant environmental impact, are to be used to support the creation or maintenance of UC defined by the licensing environmental entity.

The Company also adopts mitigating or compensating measures related to environmental impacts compliant with legal requirements, of federal and state origin, considering the interference of its projects and/or operations in the territory, covering: permanent preservation areas, vegetation and species protected by law, speleological and archeological assets, and the payment for the timber used under specific circumstances.

Federal Decree No. 6,514/08, deals with environmental violations and regulates the Law of Environmental Crimes (Federal Law no. 9,605/98), sets forth the infringements to flora and other protected areas, establishing penalties for non-compliance with the legislation, which may vary from warning, to suspension of work, suspension of activities and fine (which may vary from R$5,000.00 to R$50,000.00).

Waste Management and Contaminated Areas

Solid waste management activities are regulated by the National Policy on Solid Waste, created by Federal Law no. 12,305/10. This law requires responsibility by all those involved in the management of waste, for instance, environmental friendly disposal of waste.

Table of Contents

All areas identified as contaminated must be investigated and should the risk analysis indicate the need for intervention, it should be subject to remediation until risks are under control. Failure to comply with the responsibility may cause application of administrative and criminal sanctions, and indemnities in the civil sphere.

The holder of a contaminated property must repair any environmental damage or adverse impact, in the area, regardless of the contamination cause, which may cause significant expenses (obligation bound to the property, and not the party exploring it). Note that the responsibility for an environmental damage is not subject to the statute of limitations, that is, it never matures over time.

Cavities

Natural underground cavities represent fragile ecosystems that comprise the national speleological assets. Intervention in natural underground cavities is regulated by Federal Decree 6.640/2008, which sets forth about the means to intervene in such areas, according to the degree of relevance of the cavity. Interference in cavities imposes the need of carrying out broad technical studies and is subject to complex discussions with applicable entities. The occurrence of natural underground cavities may be determining in planning and deployment of mining projects, and limit or alter exploitation plans, as well as generate additional costs related to the preservation of the cavity or compensation measures arising out of impacts to such cavities.

Archeological sites and historical and cultural interest areas

The Federal Constitution provides that the government and the civil society are responsible for protecting the cultural heritage. In areas with the potential of having archeological sites and historic and cultural interest areas, the Company must obtain the appropriate authorization from the National Institute of Historical and Artistic Heritage (IPHAN) at project planning. Non-authorized interference on cultural, historical, and archeological areas is considered to be an administrative infringement, subject to penalties.

Actions adopted by Vale, appropriate to the disclosure and protection of the Cultural Heritage, shall occur in all phases of the project and not only during the planning phase. On the date of this Reference Form, Vale holds over 20 archeological sites preserved inside Vale s properties, and several of these sites are protected and coexist with Company operations. Vale is responsible for their protection, maintenance and assurance of enjoyment by communities.

Hydric resources

Quantitative and qualitative monitoring of hydric resources and effluents defined in the licenses, authorizations, and permits, must be complied with.

According to the National Policy of Hydric Resources, the Company is subject to the granting of the following use rights of hydric resources by the Public Authority: (1) derivation or capture of portion of water existing in a water body for final consumption; (2) extraction of water from underground water reserve for final consumption or as input of productive process; (3) release of sewage in water bodies, as well as other liquid or gas effluents, whether or not treated, for purposes of diluting, transporting, or final disposition of them; (4) use of hydroelectric potential, and (5) other uses that alter the regime, the quantity, and quality of the water existing in a water body.

Table of Contents

Carbon emissions and climate change

Climate changes may adversely affect technical requirements of Company projects, the use of equipment and the provision of services, that may have impact on the schedule and cost of Company activities.

Gas emissions that cause the greenhouse effect may, for instance, impact the operations of the Company by imposing taxation over greenhouse gas emission and/or the establishment of emission limits. These measures will demand more intense power effectiveness actions and the Company should search for a power matrix based on renewable sources.

There is a global trend to tax effects arising out of climate changes, that could affect Vale s businesses in the future, especially initiatives aiming carbon taxation in navigation, which could raise Vale s freight costs, namely for the Asian market.

The Company maintains policies and plans to prevent and mitigate climate changes, adopted in its operations around the world and applicable to the suppliers chain.

Environmental Liability

Environmental liability may occur in three different and independent spheres: (i) civil; (ii) administrative and (iii) criminal.

- *Civil Liability:* the entrepreneur, regardless of the existence of guilt, must compensate or repair damages caused to the environment and third parties affected by its activities. The environmental legislation sets forth the joint responsibility between polluting agents (Federal Law 6.938/81), which implies responsibility of all parties engaged in an event that causes environmental damages.

- *Administrative Responsibility:* Administrative responsibility arises out of an action or omission those results in violation against any rule related to environmental protection (Federal Decree 6.514/08). Sanctions against an administrative infraction may include warning, fine, non-use of product, suspension of sale and manufacturing of product, suspension of work or activity, demolition of work, suspension of tax benefits and cancellation or interruption of credit facilities granted by State banks, as well as prohibition to be hired by public entities.

- *Criminal Responsibility:* In the criminal sphere, Federal Law 9.605/98 (Environmental Crime Law) causes any person, individual or legal entity engaged in conducts deemed to be damaging to the environment to be subject to

its effects. The Law also provides for the possibility of piercing the corporate veil of the entity causing the environmental infringement in some cases. Applicable sanctions to legal entities may be (i) partial or total suspension of the activity; (ii) temporary interdiction of establishment, work, or activity; and, (iii) prohibition of contracting with Public Authorities, as well as obtain subsidies, subventions, or donations.

Other Considerations on Environmental Laws

Environmental legislation is becoming increasingly stricter worldwide, which consequently will lead to greater investments in Vale projects. In particular, Vale expects heightened attention from various governments to issues related to reducing greenhouse gases, as result of concerns with climate changes, especially following the Paris Climate Convention in the end of 2015. There are several examples of environmental regulations and compliance initiatives that may affect Vale s operations.

Table of Contents

- *Canada*. In Canada, a greenhouse effect gas limitation and a regulation for the exchange regime have been proposed, which may affect Vale s operations. In Canada, Vale is making great investments to ensure compliance with the emission regulations, which include, without limitation, reduction in sulphur dioxide emissions, emissions of greenhouse effect gases, particulates and metals.

- *Indonesia.* Under the terms in the Government Regulation on B3 waste (hazardous waste), the waste of PTVI is classified as hazardous waste. The unit has environmental authorization for internal storage of waste and is working on the development of solutions and technologies for environmental-appropriate disposal.

- *China*. An amendment to the environmental protection law has been approved in April 2014, establishing stricter obligations on the prevention and control of pollution for companies, setting forth more severe penalties. This change may adversely affect coal exportations of Vale from Mozambique to China

- *New Caledonia*. A law, approved in the South Province in New Caledonia, in February 2014, imposed more rigid limits to emissions of nitrogen and Sulphur oxide and particulate from large electric burning plants, impacting the power station that provides power to Vale s operations in New Caledonia. In order to be in conformity with the new law, investments must be made by the Company to improve the control system for such emissions.

Royalties and other taxes on mining activities

In many jurisdictions, Vale must pay royalties or fees on the Company revenues or profits from extraction and sale of minerals. These payments should be considered for the preparation of the economic model of a mining operation. The following royalties and fees apply in some of the jurisdictions in which Vale has its largest operations:

- Brazil. In Brazil, in addition to taxes incurring on the mining prospecting and extracting, Vale pays (a) the Annual Rate per Hectare (TAH) calculated according to the mineral that is sought after, the extension and location of the mining concession in vase of minerals under prospection; (b) locally, mining *royalties* known as the CFEM (Compensação Financeira pela Exploração de Recursos Minerais or Financial Compensation for Exploration of Mineral Resources) and incurring on the net revenue after taxes from the sale of minerals extracted by Vale, net of insurance and transportation costs. The current annual CFEM rates on Company products are: 2% for iron ore, copper, nickel, fertilizers and other materials; 3% on bauxite, potash and manganese ore; and 1% on gold; and (c) the Mineral Resource Inspection Fee TFRM, with rates varying from R$0.50 to R$ 3.025 per metric ton of mineral produced or transferred from the state, which is the fee due to the states of Minas Gerais, Pará, Amapá and Mato Grosso do Sul due to inspections to mineral resources research, production, exploration and/or development activities, under the terms in the legislation enacted by each of these States. As mentioned above (in item *Regulation of mining activities*),

in October 2014, the Special Mining Commission of the House of representatives created to develop a new project to replace the current Mining Code submitted a replacement to the bill submitted by the federal Government in 2013 which consolidated several prior bills, and sets forth regarding new taxes and fees attributable to mining activities, the change to the calculation base and rate of the CFEM, as well as the creation of new fees, for instance (i) the inspection fee, variable according to the company income; (ii) the water retention and occupation fee (possibly replacing TAH); and (iii) reduction from 50% (fifty per cent) to 20% (twenty per cent) of the portion applicable to the owner of the land on the value of the CFEM.. Vale is currently engaged in several administrative and legal proceedings that relate to the non-payment of amounts due as CFEM. See item 4.3 in this Reference Form for further information.

Table of Contents

- Canada. The Canadian provinces in which Vale operates charge a tax on profit from mining operations. Profit from mining operations is generally determined by reference to gross revenue from the sale of products of mine output and deducting certain costs, such as mining and processing costs and investment in processing assets. The rates are 10% in Ontario; up to 17% in Manitoba; and a combination of mining fee and royalties equal to 16% in Newfoundland and Labrador. The mining fee paid is deductible for corporate income tax purposes.

- Indonesia. Vale s subsidiary PTVI pays mining royalties corresponding to 2% over its matte nickel revenue, when LME nickel price is lower than US$ 21,000 per metric ton; and 3% over its matte nickel revenue, when LME nickel price is equal or higher than US$ 21,000 per metric ton.

- Australia. In Australia, royalties are paid on the revenues from sales of minerals. In the State of Queensland, royalty applicable to coal is 7% of the net income (deducting freight costs, fines over stay, and other costs) up to A$100 per ton and 12.5% of the amount between A$100 and A$150 per ton and 15% over A$ 150 per ton.

- *Zambia*. In 2015, the government of Zambia deployed a series of changes to the fiscal regime applicable to the mining sector. For the period between January 1, 2015 and June 30, 2015, the government has eliminated income tax from mining companies (except for taxes related to ore processing) and increased royalties applicable to underground mine operations as is the case of Vale s operations in *joint ventures*, from 6% to 9%. In July 2015, the government (i) reduced mineral royalties on underground operations to 6%, (ii) reintroduced the previously abolished tax of 15% on the net profit of operations, applicable when taxable gains exceed 8% of gross sales, and (iii) reintroduced income tax at 30% over net profit of mining operations and 35% over the net profit from mineral processing.

Regulation of other activities

In addition to mining and environmental regulation, Vale is subject to comprehensive regulatory regimes for some of its other activities, including rail transport, port operations, and electricity generation. Vale is also subject to workers health and safety legislation, safety and support of communities near mines, and other matters. Descriptions below relate to some regulatory regimes applicable to its operations:

- Brazilian railroad and ports regulation. Aiming to ensure the reliability on the railroad and port logistics aimed to meet specific needs to larger volumes with operation efficiency, Vale acts in these sectors by means of its assets Estrada de Ferro Carajás, Estrada de Ferro Vitória a Minas and its port terminals detailed in this Reference Form. In this sense, Vale holds the concession of railroad services and authorizations to explore its Private Port Terminals, and executed a lease agreement preceded by bidding process to explore the Private Terminal for M Ore Exportation by CPBS Companhia Portuária Baía de Sepetiba (CPBS).

Vale s Brazilian railroad businesses operate according to concession contracts by the Federal Government, and its railroad concessions are subject to regulations and supervision by the Ministry of Transports and the land transportation regulating agency (ANTT). The EFC and EFVM concessions mature in 2027 and may be renewed at the sole discretion of the Federal Government. VLI also has a sub concession contract for commercial operation of a 720 km segment of the FNS railroad in Brazil, which expires in 2037, while the concessions for FCA and MRS mature in 2026. Railroad transportation prices may be negotiated directly with the users of these services, subject to maximum limitations of fees approved by the ANTT for each concessionaire and each different product that is carried. ANTT regulations also require the concessionaires to grants use rights of the railroad (*trackage rights*) to other railroad operators, to make investments in the railroad, as well as to comply with specific productivity and safety requirements, among other obligations.

In these activities, Vale is subject to regulatory inspection by the ANTT, linked to the Ministry of Transportation for railways; and the National Agency of Water Transportation (ANTAQ), linked to the Secretary of Ports of the Presidency of the Republic (SEP), for port activities. Both Agencies were created in 2001 by Federal Law no. 10.233/01, that established attributions to inspect compliance with the contracts and establish complementary rules to regulate the railroad and port sectors. Regulatory acts issued by the ANTT in recent years include rules dealing with User Regulations, rules for determination of goals, rules for sharing infrastructure in 2011 and independent railroad operator in 2014. In terms of ports, Law 12.815/2013 presented substantial changes, for instance, the end of restrictions associated to third party cargo, and the possibility of having exceptional third party access to private terminals. ANTAQ promoted adaptation of adherence agreements and issued new resolutions with procedures for new grants, inspection of private use terminals, and applicable penalties.

Regarding prices, railroads are subject to tariff tables determined by ANTT, with annual adjustments, applicable to third party users of railroad services. When carrying own cargo, a transfer price was set merely for purposes of accompaniment of the concession. In case of port terminals, this is a private economic activity exercised with free prices. For own cargo, there is no price asked, considered to be production cost, except for the service provided by CPBS to Vale, as this is a specific purpose company, it asks for fee for port movements.

Table of Contents

In 2014, Vale has renewed the agreements under which SEP grants rights to Vale to operate its private terminals, except for the contract with CPBS, which expires in 2026. These renewed agreements shall be in force until 2039.

- Regulation of chemical products. Some of Vale s products are subject to regulations applicable to the marketing, distribution and use of chemicals in their compositions. For example, the European Commission has adopted a European Chemicals Policy, known as REACH (Registration, Evaluation, and Authorization of Chemicals). Under REACH, European manufacturers and importers are required to register substances prior to their entry into the European market and in some cases may be subject to an authorization process. A company that fails to comply with the REACH regulation could be subject to fines and penalties.

- Regulation in Transocean transportation of iron ore and iron ore fines. Vale is subject to health, safety and environmental rules issued by the International Maritime Organization (IMO) that governs the safe shipment of products, including iron ore. IMO is currently discussing additional technical and operational measures to increase energetic effectiveness of international maritime transportation, including the development of a global monitoring system, report checking and presentation, which will ultimately allow that market-based measures stop greenhouse effect gases. These measures may increase Vale s freight cost in the future.

Table of Contents

b. Environmental policy of the Company and costs incurred for compliance with environmental regulation and, where appropriate, other environmental practices, including adherence to international standards of environmental protection

Vale s governance structure is based on policies with guidelines and principles that direct the strategy, the process and the actions taken by the Company. Key policies related to the environment are the Sustainable Development Policy, the Security and Health Policy, the Climate Global Change Policy, and the Human Rights Policy. These policies, with specific plans and programs for each Vale unit provide the necessary guidance to achieve its sustainability goals and its short, medium, and long term business decisions.

Vale s Environmental Management System determines the development and implementation of effective control, monitoring, conservation, environmental protection and rehabilitation, aimed at ensuring the minimization of the environmental impacts on the ecosystems in which it operates. Vale s management system is based on ISO 14001 (*International Organization for Standardization*) guidelines, to which it adds additional requirements that make up Vale s standard of environmental quality, which, in some cases, establish more restrictive requirements to the list of applicable legal requirements, for purposes of promoting continuous improvement of environmental management. Aiming to assess the effectiveness of the environmental management system, Vale submitted the operations, periodically, to internal and external audits.

Vale s units with ISO 14001 are listed below:

- Iron ore: Ferrosos Sul, Ferrosos Sudeste, Ferrosos Centro-Oeste, Ferrosos Norte and Complexo de Tubarão;
- Manganese: Conselheiro Lafaiete (Morro da Mina);
- Nickel: Onça Puma, Vale Europa (Refineries Acton and Clydach), Vale Dalian (China), Vale KNC (South Korea), Vale Taiwan (Taiwan) and Vale Matsusaka (Japan);
- Logistics: Port and railway operation at Complexo de Tubarão;
- Copper: Minas do Sossego and Salobo;
- Fertilizers: Cubatão (1, 2 and 3), Catalão, Araxá, Tapira and Uberaba.

In the last three years, US$2,451.8 million was invested in environmental management actions; these actions were focused on compliance with regulations or other environmental practices.

As Vale is a mining company, air emissions is one a significant environmental aspect inherent to its operations and impose to the Company the need to deploy specific control actions in order to ensure conformity of its activities with legal requirements (emission standards and air quality

in neighboring communities) and Vale s performance standards. Vale s systems and equipment related to pollution control include: a water aspersion system for unpaved roads, as well as the use of chemical inhibiting substances to control dust, filters and electrostatic precipitators complemented by integrated monitoring systems and online control software.

Another relevant aspect of the Environmental Management System is the rational use and quality of the water resources where Vale has control systems for the effluents generated, as well as programs and development of technologies for continual reduction of consumption and/or re-use.

The waste management program is another initiative that prioritizes minimization of generation, as well as re-use and recycling procedures, as well as adequate disposal practices.

The orientation for decommissioning of assets include practices and procedures implemented over the project life cycle. These procedures are aligned with the guidelines of the *Comissão de Valores Mobiliários* - CVM and the Securities Exchange Commission - SEC (IAS 37) for the annual estimates of asset demobilization costs and provisioning of resources for future deactivation and recovery of the area. The definition of future use of each unit is established in the Closing Plan, considering environmental, social and economic aspects, according to the specific operational procedure, noting that the Sustainability Report reflects the percentage of compliance with these guidelines.

In regards to risk management, the tailings dams are highly relevant and are submitted to periodic safety audits, as well as to operation and monitoring practices to evaluate geotechnical stability.

Vale s environmental program also includes management of recovery of degraded areas (RAD) in the territories where the Company has activities, whether or not these areas were degraded by operational activities. RAD management also covers the preparation of restoration and repair projects aimed at protection of water resources, harmonization of scenery, geotechnical stability, increasing, gene flow and the well-being of human populations. Vale has partnerships with universities, institutions and governmental research agencies to optimize methods of protecting the ecosystem.

Table of Contents

Vale acts in several areas, including areas of high cultural value and high relevance for biodiversity. In all the stages of its projects, Vale develops and supports actions that encourage the conservation and sustainable use of natural resources through the adoption of good practices to mitigate negative impacts and promote positive impacts in the locations where Vale acts.

For preservation of biodiversity and ecosystem services, Vale contributes to the maintenance of protected natural areas, whether its own or in partnership with local governments, intended for conservation, and promotion of engagement with communities, scientific institutions, governments and other relevant actors.

In order to build a positive legacy, in the past 25 years, Vale has offered support to indigenous communities in education, health, infrastructure development and technical assistance to improve the quality of life and self-sufficiency of these communities. For more details on information highlighted above, see the Sustainability Report of the Company, available at the website indicated in item 7.8(d) in this Reference Form.

c. Reliance on patents, trademarks, licenses, concessions, franchises, contracts, royalties for the development of relevant activities.

Vale operates mines, railways, ports, marine terminals and power plants, in general, through concessions granted by federal and State governments in several countries. Accordingly, Vale depends greatly on the concession of operating licenses for such assets for the development of its activities. For more information on Vale s permits and concessions, see item 9.1 b of this Reference Form.

Additionally, Vale s intangible assets portfolio, as a whole, generates added value for our operating units in different aspects, whether by the commercial side, which includes technology transfer, open innovation, and economic exploration, whether as unique competitiveness tool, as it creates technological barriers to competitors, or even as instrument to increase productivity and/or reduce personal and environmental risks, as patents related to employee health and security in strategic areas. Among its intangible assets, Vale considers its registrations for the brand VALE as the most relevant ones for its activities which, with other assets, offer direct technical and financial benefits for Vale s activities in different production fronts.

Table of Contents

7.6 Relevant revenue from abroad

Fiscal year ending on December 31, 2015

Revenue from customers attributed to:	Revenue (R$ thousands)	% In total income
China	30,812	43.5
Japan	6,498	9.0
United States	2,804	3.9
Europe	15,535	21.5
Middle East/Africa/Oceania	3,941	5.4
Other countries	12,829	17.7
Total income from abroad	**72,419**	**100**

7.7 Effects of foreign regulations on activities

For information on the effects of foreign regulations on Vale s activities see item 7.5 in this Reference Form.

7.8 Social environmental policies

(a) if the issuer discloses social and environmental information:

Sustainability

Vale is committed with sustainability, as it is unable to grow disregarding the physical limitations of our planet or the well-being of communities where it operates. Since 2013, Vale incorporates environmental and social actions directly in its strategic plan, moving away from an isolated investment model. The company is engaged in sustainable mining, dedicating resources to education and searching the application of technologies to use natural resources more effectively. Vale is also committed to reducing the consumption of water in its activities and with more effective use, especially through reuse and recirculation of water. The water actively supports open dialogue with the main stakeholders (governments, communities, clients, suppliers, collaborators, and others), because it recognizes that only with joint action it may achieve sustainable growth and contribute to social well-being. Vale follows social action rules and principles on businesses and human rights based on the guidelines by the United Nations Human Rights Council. Vale is also committed to reduce greenhouse effect gases.

The Company, with the support by its Board of Directors, reaffirms in its Sustainability Report its commitment with the United Nations Global Pact and reports, in such document, the progress in the deployment of its principles.

The focus of Company investments is the development of world-class assets, with long use life, low cost, high-quality products, employing state of the art technology and expansion capacity, taking into account value generation linked to commitments assumed with people at different sites where the Company acts and with the planet.

The pillar Incorporate Sustainability into Business is one of the five pillars in Vale s environmental strategy and in order to leverage progress in its management the Company established global policies as the Sustainable Development Policy, the Human Rights Policy, and the Health and Security Policy. Additionally, Vale (i) maintains the Sustainability Action Plan (PAS), which indicators are related to issues that aim continuous improvements of Company performance regarding sustainability aspects; (ii) established priority environmental aspects as diminishing the issuance of greenhouse gas effects, preservation of the quality of water resources and protection of natural areas, and (iii) is committed to promoting the sustainability agenda with its vendors and clients and to acting to promote the sustainable development in partnership with governments and the society.

Additionally, Vale s variable compensation program binds the economic and financial performance to operational excellence and sustainability which in turn are linked to issues that aim continuous improvement. These indicators are focused on the environment, and starting in 2014, incorporate social issues of the operational units as well. Environmental indicators consider water, residues, emissions, direct and indirect power, and the recovery of damaged areas.

In 2015, Vale continued to be part of ICO2 Efficient Carbon Index and was also selected, for the fifth consecutive year, to be part of the BM&F Bovespa ISE Corporate Sustainability Index (ISE). However, Vale is not part of the ISE portfolio in 2016. Notwithstanding, Vale s commitment with sustainability in its operations hasn t changed.

Table of Contents

The Company is part of the group of companies of the United Nations Lead Global Pact and is committed with the promotion of its principles, in issues related to human rights, labor rights, fight against corruption, and environment protection.

The Company obtained the best grade, regarding quality in transparency related to the disclosure of information on climate changes, among Latin American companies that respond to the CDP questionnaire, and for the fifth time it is part of the *Climate Disclosure Leadership Index* (CDLI).

In line with sustainability practices, Vale continues to deploy measures to reduce the incurrence of accidents. In Brazil, in 2015, the Lost Work Case Frequency Rate (LWCFR), measured in number of accidents with lost work per million man/hours worked, was 0.56. The Total Recordable Injury Frequency Rate (TRIFR), in number of accidents per million man/hours worked was 1.47. Global indicators reflect, likewise, progress in Vale s goals, with a 3% reduction in LWCFR, reaching 0.586 in 2015.

Sponsorship and Social Activity Policy

The Company has a global sponsorship policy for projects that contemplates the following segments:

- Cultural: the Company values the culture in the areas where it operates, favoring its promotion and the cultural exchange between territories. Cultural sponsorships follow its Cultural Policy, which sets forth the following lines of action: a) access to culture; (ii) promotion of indigenous culture and culture of traditional communities; (iii) valuation of cultural identity and heritage; and (iv) musical education

- Technical Institutional: the Company sponsors projects and partnerships that contribute to the theoretical and practical evolution of knowledge aiming sectors the company Works with, whether directly connected to its business and other areas of institutional interest or areas related to its mission.

In order to guide its social investment, Vale has a specific policy for Brazilian territory, namely, the Social Action Policy, which establishes the following priorities: (i) basic attention to health, (ii) education, and (iii) employment and income generation. This policy also establishes guidelines for the relationship with communities. In addition, the social investment also considers the Company Cultural Policy regarding the social and cultural aspects.

(b) methodology adopted in the preparation of information:

The methodology used to prepare the Sustainability Report is the *Global Reporting Initiative (GRI)*. GRI guidelines are an international reference for all the players interested in disclosing information about organization management, their environmental, social, and economic performance, and impact on these areas. GRI offers principles, content and a deployment manual in order to allow different organizations, regardless of their size, location, or industry, to prepare sustainability reports.

(c) whether the information is audited or revised by independent entity:

The Sustainability Report is annually audited by an independent audit company. The 2015 Sustainability Report was audited by Bureau Veritas Brasil.

(d) the world wide web webpage where this information is available:

The Company Sustainability Report is available at www.vale.com/rs2015.

7.9 - Other relevant information

Updates related to the collapse of the Samarco tailings dam

On November 5, 2015, Samarco S.A. (Samarco) experienced the burst of the iron ore tailings dam (Fundão) in the State of Minas Gerais, Brazil, which affected communities and ecosystems, including the Rio Doce.

As a consequence of the collapsed of the dam, the Government of Minas Gerais has determined the suspension of operations at Samarco.

On March 02, 2016, Samarco, and their shareholders, Vale S.A. (Vale or Company) and BHP Billiton Brazil Ltda. (BHPB) entered into an agreement with the Federal Government, the two Brazilian States affected by the collapse of the dam (Espírito Santo and Minas Gerais) and other parts (Agreement). The agreement, which does not foresee the assumption of criminal, civil, or administrative liabilities related to the collapse of the Fundão dam, should end the suit filed in Brazilian courts by various Brazilian governmental authorities. The Agreement has a term of 15 years renewable yearly until all the obligations set forth in the agreement have been met.

Table of Contents

Under the Agreement, Samarco, Vale and BHPB shall establish a foundation (Foundation) to develop and implement restoration programs to restore the environment, local communities and, the social conditions in areas affected areas, as well as compensation programs.

Samarco has agreed to make contributions to the Foundation in the amount of R$ 2,000 million in 2016, R$ 1,200 million in 2017 and R$ 1,200 million in 2018. The amounts already spent by Samarco in restoration and compensatory actions shall be deducted from these contributions. Samarco has agreed to make the annual contributions needed to conduct the remaining approved projects of restoration and compensation, and in 2019 to 2021 these contributions are subject to a minimum annual amount of R$ 800 million and maximum annual amount of R$ 1,600 million. The Foundation shall allocate an annual amount of R$ 240 million, over 15 years, for the implementation of compensation programs. This amount will be included in the first six years of the annual contributions described above. By the end of 2018, the Foundation shall also allocate R$ 500 million for basic sanitation on the affected areas.

In compliance with the agreement, Samarco shall continue to be the primary funder and operator of restoration and compensation programs until the Foundation initiates operations, likely by the end of 2016.

Currently, Samarco is unable to resume mining and processing activities. Samarco s management is developing a plan to resume operations, however, the possibility, time, and scope this still remain uncertain.

If Samarco fails to comply with its obligation to invest funds in the Foundation, Vale and BHPB shall be liable, pursuant to the terms of the agreement, for providing resources to the Foundation to the extent of their stake Samarco, i.e., 50% each.

Vale analyses concerning its real need to provide resources to the Foundation are based on future projections of Samarco s cash, which have critical estimates and assumptions in their preparation, including, but not limited to: (i) resumption of operations in a reasonable time; (ii) the favorable outcome of renegotiations with financial institutions and holders of Samarco bonds, since Samarco is not going to meet the financial indicators

(financial covenants) foreseen contractually; and, (iii) the recovery of judicial deposits in connection with ongoing lawsuits.

Failure to meet the key premises aforementioned in a timely manner significantly increases the risk that Vale and BHPB are required to make contributions to the Foundation. To this effect, the Company s Management anticipates that these contributions, if required, shall be made for a limited period of time, until Samarco manages to develop the required actions to implement those premises, which shall re-establish its cash generation and alignment with the disbursement necessary to the comply with the terms of the agreement.

Right now, in light of the existing uncertainties, it is not possible to reasonably estimate or define the amounts that Vale may be required to provide nor how. Consequently, as of now, no provision has been specified in the Company s financial statements.

For information about the legal and administrative procedures associated with the collapse of the Fundão dam in which Vale is a party, as well as about the agreement entered into by Samarco, its shareholders, Vale and BHPB, and the Federal Government, the two Brazilian States affected by collapse (Espírito Santo and Minas Gerais) and other entities, see the items 4.3 to 4.7 of this Reference Form.

Suspension of some iron ore operations in the Southeast System

In July 2015, the Company temporarily suspended operations on certain processing units of iron ore that shower higher processing costs and lower quality products in the mining complex of Paraopeba. It reduced the production of lower quality products in certain mines of the mining complex of Minas Itabiritos, both in the Southern System. The Company resumed some of these operations, although with lower productivity. The decision is consistent with the Company s strategy to improve product quality and increase profit margins.

Act # 12.973

Act # 12.973 was amended on May 13, 2014 (regulated by Normative Instruction # 1.515 and 1.520), which significantly changed the current federal tax laws, widely affecting the taxation of Brazilian companies. Among the issues addressed by Act # 12.973 are:

- a new mechanism to tax in Brazil profits generated abroad by direct and indirect subsidiaries located abroad, on an accrual basis, and of the sister companies on a cash-basis, earned in the balance sheet according to local practices, and limited deductions on taxes paid abroad are possible. If certain conditions set forth in this legislation are met, the following shall be allowed: (1) consolidation of results (profits and losses) of eligible direct and indirect subsidiaries for tax purposes until 2022, and, (2) deferred payment for up to eight years of taxes due on the profits of eligible foreign companies. This change may result in a tax income increase starting on 2015;

- end of Transitional Tax Regime (RTT), with the adaptation of the current tax rules to the new accounting standards in force in Brazil. Generally speaking, Act # 12.973 regulated the tax treatment applicable to revenue, costs, expenses and assets variations recognized by Brazilian companies in accordance with the new accounting principles adopted in Brazil, which are a result of the process of convergence of accounting rules then adopted in Brazil to international standards (IFRS);

Table of Contents

- rule changes in tax amortization applied to the premium paid in the acquisition of share participation. Among the many new rules concerning premium from the acquisition of share participation, Act # 12.973 establishes that it shall only be deductible from the IRPJ and CSLL calculation basis premium generated between unrelated parties. It is no longer accepted deduction of premium generated between companies of the same group or through the exchange of shares (between the respective issuers). Additionally, Act #12.973 established the order in which the PPA (purchase price allocation) shall be held in acquisitions and corporate reorganizations.

- new concept of gross revenue, for PIS and COFINS purposes. Act #12.973 also expanded the concept gross revenue, which may have an impact on the PIS and COFINS calculation, applied to the gross revenue of corporations;

- treatment of dividends and interest on equity (JCP). Act # 12.973 acknowledged the exemption from profits and dividends distributed until November 12, 2013, the date on which Act # 12.973 was published, on excess earnings calculate based on accounting principles in force in 2007. To calculate the JCP deductible limit, Act # 12,973 authorized the use of the respective Brazilian company s net equity, calculated pursuant to Act # 6.404/76.

The new rules arising from Act # 12.973 comes into force on January 1, 2015.

8.1 Acquisition or sale of any relevant asset that does not fit as a normal operation in the issuer s business

There was no acquisition or sale of any relevant asset that did not fit as a normal operation relative to the Company s businesses in the past 3 fiscal years.

8.2 Significant changes in the way the issuer conducts business

There have been no significant changes in the way the Company conducts its businesses in the past 3 fiscal years.

8.3. Relevant contracts entered into by the issues or its controlling companies that are not directly related to their operational activities

There have been no relevant contracts entered into by the Company and/or its controlling companies with third parties that are not directly related to their operational activities in the past 3 fiscal years.

8.4 Other information which the Company judges to be relevant

There is no relevant information additional to what has already been disclosed in the other items.

9.1 Relevant non-current assets

Items 9.1 (a), 9.1 (b), and 9.1(c) of this Reference Form, describe the principal non-current assets of the Company.

The main fixed assets of the Company consist of various buildings, facilities, equipment, and mining rights, as described in item 9.1 (a) of this Reference Form.

The following tables describe the book value of fixed assets of the Company on December 31, 2015 by category and geographic location:

As of December 31, 2015	Brazil	Canada	New Caledonia	Asia	Africa	Others	Total
Properties and buildings	25,371,666	4,730,765	2,486,252	5,227,468	432,696	278,205	**38,527,052**
Equipment and facilities	34,210,422	5,984,892	7,222,523	6,882,689	1,089,535	4,913,245	**60,303,306**
Mining rights	12,377,073	21,114,914	2,095,557	3,514,858		1,067,061	**40,169,463**
Others (1)	16,586,149	5,360,140	676,850	3,938,107	204,695	1,434,164	**28,200,105**
Ongoing (2)	37,150,883	4,155,358	1,268,077	815,255		669,633	**44,059,206**
Total	**125,696,193**	**41,346,069**	**13,749,259**	**20,378,377**	**1,726,926**	**8,362,308**	**211,259,132**

Table of Contents

(1) Computing equipment, railroads, and others.

(2) Ongoing fixed assets.

Table of Contents

9.1 Relevant non-current assets / 9.1.a Fixed assets

Description of the fixed asset	Location Country	Location State	Location Municipality	Type of Property
Integrated iron ore production system in North System	Brazil	Various	Various	N/A
Integrated iron ore production system in Southeast System	Brazil	Various	Various	N/A
Integrated iron ore production system in South System	Brazil	Various	Various	N/A
Pelletizing plant - Tubarão I	Brazil	Espírito Santo	Vitória	Own
Pelletizing plant - Tubarão II	Brazil	Espírito Santo	Vitória	Own
Pelletizing plant Tubarão III	Brazil	Espírito Santo	Vitória	Lease
Pelletizing plant Tubarão IV	Brazil	Espírito Santo	Vitória	Lease
Pelletizing plant Tubarão V	Brazil	Espírito Santo	Vitória	Lease
Pelletizing plant Tubarão VI	Brazil	Espírito Santo	Vitória	Lease
Pelletizing plant Tubarão VII	Brazil	Espírito Santo	Vitória	Lease
Pelletizing plant Tubarão VIII	Brazil	Espírito Santo	Vitória	Own
Pelletizing plant - Fábrica	Brazil	Minas Gerais	Congonhas	Own
Pelletizing plant - Vargem Grande	Brazil	Minas Gerais	Nova Lima	Own
Integrated nickel production system: mine, processing plant, smelter	Canada		Sudbury	N/A
Integrated nickel production system: mine, processing plant, smelter	Canada		Thompson	N/A
Nickel mine and processing plant	Canada		Voisey s Bay	N/A
Manganese Mines	Brazil	Various	Various	N/A
Thermal and metallurgical coalmine	Australia		Hunter Valley	N/A
Thermal and metallurgical coalmine	Australia		Bowen Basin	N/A
Iron ore mines various Central West system	Brazil	Mato Grosso do Sul	Various	N/A
Pelletizing plant - Oman	Oman			Own
Nickel mine and processing plant	New Caledonia		Noumea	N/A
PVTI nickel mine	Indonesia		Sorowako	N/A
Nickel refinery Clydach	Wales		Clydach	Own
Sossego mine	Brazil	Pará	Various	N/A
Salobo mine	Brazil	Pará	Various	N/A
Onça Puma mine	Brazil	Pará	Various	N/A

Table of Contents

Thermal and metallurgical coalmine - Moatize	Mozambique		Various	N/A
Potash mine Taquari-Vassouras	Brazil	SE	Various	Own
Phosphorite mine - Bayóvar	Peru		Piura	N/A
Phosphorite mine and processing plant	Brazil	Various	Various	N/A
Port Colborne smelter of precious metals	Canada		Ontario	Own
Ferroalloys plant	Brazil	Various	Various	Own
Platinum Refinery	Great Britain		Acton	Own
Nickel refinery Taiwan	Taiwan		Kaoshing	Own
Nickel refinery Matsuzaka	Japan		Matsuzaka	Own
Nickel refinery Dalian	China		Dalian	Own

Table of Contents

9.1 - Relevant non-current assets / 9.1.b Intangible assets, like patents, trademarks, licenses, concessions, franchises, and contracts for technology transfer and domain name in the World Wide Web

Type of asset	Description of asset	Duration	Events which might cause a loss of rights	Consequences of loss of rights
Concessions	Mining concessions in Brazil	Undetermined	Persistent breach of current mining legislation: predatory mining; mining stopped without notice to, and consent of, the competent agency; not answering repeated requests for routine inspections.	Interruption and/or cancellation of mining operations in Brazil
Concessions	Lease license to mining in Canada	2016-2036	Failure to pay taxes (mining tax or rental fees), non-compliance with regulation, failure to present renewal application. Rejection of application for renewal, noncompliance with renewal requirements.	Interruption and/or cancellation of mining operations and/or mineral exploration in Canada

Table of Contents

Type of asset	Description of asset	Duration	Events which might cause a loss of rights	Consequences of loss of rights
Concessions	Contract of Work in Indonesia	2025	End of the term of the contract; cancellation due to errors or irregularity in the procedure for or in the act of its granting; and in the case of the bankruptcy or dissolution of the concessionaire. Breach of legislation. The Contract of Work of mines that Vale has in Indonesia expires in 2025. However, according to the new Mining Law, Vale may request at least one extension of 10 years.	Interruption and/or cancellation of mining operations in Indonesia.
Concessions	Mining lease in Australia	2021-2041	Non-payment of lease/royalties; failure to submit report on activities. Breach of legislation.	Interruption and/or cancellation of mining operations in Australia.
Concessions	Mining concessions in New Caledonia	2016-2051	Non-payment of fees, non-payment of lease/royalties; non-submission of report on activities; lack of activity on the concessions. Breach of legislation.	Interruption and/or cancellation of mining operations in New Caledonia; impossibility of adding mineral resources that allow expanding our mining activities outside the area of the VNC project.
Concessions	Mining concessions in Peru	Undetermined	Non-payment of fees for more than two consecutive years and non-payment of fines. Breach of legislation. Additional information in the Duration field: Undetermined Deadline, given that the unproductive mining concessions end between 2023 and 2028.	Interruption and/or cancellation of mining operations in Peru.

Table of Contents

Type of asset	Description of asset	Duration	Events which might cause a loss of rights	Consequences of loss of rights
Concessions	Mining concessions in Argentina	Undetermined	Failure to present the request for measurement, failure to use legal labor (LL), non-payment of fee (*canon minero*)	Interruption and/or cancellation of mining operations in Argentina.
Concessions	Mining concessions in Mozambique	2032	In this country, the reasons for loss of the concession are, above all, related to: (i) the abandonment or the mine; (ii) the performance of mining activities under health and safety conditions that are not compatible with the requirements of local legislation; (iii) the lack of payment of fees regarding production of minerals and other levies due as a result of carrying out mining activity; and (iv) bankruptcy of the company, failure to demarcate the area, failure to pay specific taxes, failure to present working reports, and non-performance of work in accordance with the mining plan.	Interruption and/or cancellation of mining operations in Mozambique.

Table of Contents

Type of asset	Description of asset	Duration	Events which might cause a loss of rights	Consequences of loss of rights
Concessions	Rail concession for passenger and freight transport on the EFC Railroad	2027	The concession will be terminated if one of the following takes place: the end of the contractual period, nationalization, forfeiture, rescission, cancellation, or bankruptcy or dissolution of the concessionaire Additional information in the Duration field 2027 (extendible for 30 years)	Interruption and/or cancellation of the railroad operations, which make up the Northern System of Vale.
Concessions	Rail concession for passenger and freight transport on the Vitória a Minas Railroad	2027	The concession will be terminated if one of the following takes place: the end of the contractual period, nationalization, forfeiture, rescission, cancellation, or bankruptcy or dissolution of the concessionaire. Additional information in the Duration field 2027 (extendible for 30 years)	Interruption and/or cancellation of the railroad operations, which make up the Southeast System of Vale.
Concessions	Concession for the Center-East network belonging to the Rede Ferroviária Federal S.A., granted to FCA	2026	The concession will be terminated if one of the following takes place: the end of the contractual period, nationalization, forfeiture, rescission, cancellation, or bankruptcy or dissolution of the concessionaire. Additional information in the Duration field 2026 (extendible for 30 years)	Interruption and/or cancellation of the railroad operations.

Table of Contents

Type of asset	Description of asset	Duration	Events which might cause a loss of rights	Consequences of loss of rights
Concessions	Sub concession contract with lease of North-South Railroad network	2038	The concession will be terminated if one of the following takes place: the end of the contractual period, nationalization, forfeiture, rescission, cancellation, or bankruptcy or dissolution of the subconcessionaire. Additional information in the Duration field 2038 (extendible for 30 years)	Interruption and/or cancellation of the railroad operations.
Concessions	Concession for use of public property for electric energy generation UHE Igarapava	2028	(i) by reversion of the asset at the end of the contractual period; (ii) by nationalization.	Interruption and/or cancellation of the supply of energy from the hydroelectric plant.
Concessions	Concession for use of public property for electric energy generation UHE Porto Estrela	2032	(i) the termination of the contractual period; (ii) by nationalization of the services; (iii) by forfeiture; (iv) by rescission; (v) by cancellation as a result of defect or irregularity verified in the procedure or act of making the grant; (vi) in the case of bankruptcy or dissolution of the concessionaire.	Interruption and/or cancellation of the supply of energy from the hydroelectric plant.
Concessions	Concession for use of public property for electric energy generation UHE Capim Branco I and II	2036	(i) the termination of the contractual period; (ii) by nationalization of the services; (iii) by forfeiture; (iv) by rescission; (v) by cancellation as a result of defect or irregularity verified in the procedure or act of making the grant; (vi) in the case of bankruptcy or dissolution of the concessionaire.	Interruption and/or cancellation of the supply of energy from the hydroelectric plant.

Table of Contents

Type of asset	Description of asset	Duration	Events which might cause a loss of rights	Consequences of loss of rights
Concessions	Concession for use of public property for electric energy generation UHE Funil	2035	(i) the termination of the contractual period; (ii) by nationalization of the services; (iii) by forfeiture; (iv) by rescission; (v) by cancellation as a result of defect or irregularity verified in the procedure or act of making the grant; (vi) in the case of bankruptcy or dissolution of the concessionaire.	Interruption and/or cancellation of the supply of energy from the hydroelectric plant.

Table of Contents

Type of asset	Description of asset	Duration	Events which might cause a loss of rights	Consequences of loss of rights
Concessions	Concession for use of public property for electric energy generation UHE Aimorés	2035	(i) the termination of the contractual period; (ii) by nationalization of the services; (iii) by forfeiture; (iv) by rescission; (v) by cancellation as a result of defect or irregularity verified in the procedure or act of making the grant; (vi) in the case of bankruptcy or dissolution of the concessionaire.	Interruption and/or cancellation of the supply of energy from the hydroelectric plant.
Concessions	Concession for use of public property for electric energy generation UHE Candonga	2035	(i) the termination of the contractual period; (ii) by nationalization of the services; (iii) by forfeiture; (iv) by rescission; (v) by cancellation as a result of defect or irregularity verified in the procedure or act of making the grant; (vi) in the case of bankruptcy or dissolution of the concessionaire.	Interruption and/or cancellation of the supply of energy from the hydroelectric plant.

Table of Contents

Type of asset	Description of asset	Duration	Events which might cause a loss of rights	Consequences of loss of rights
Concessions	Concession for use of public property for electric energy generation UHE Estreito	2037	(i) termination of the contractual period; (ii) nationalization; (iii) forfeiture; (iv) rescission; (v) cancellation as a result of defect or irregularity verified in the procedure or act of making the grant; (vi) bankruptcy or dissolution of the concessionaire.	Interruption and/or cancellation of the supply of energy from the hydroelectric plant.

Table of Contents

Type of asset	Description of asset	Duration	Events which might cause a loss of rights	Consequences of loss of rights
Concessions	Concession in a shared arrangement for electric energy generation UHE Machadinho	2032	(i) by reversion of the asset at the end of the contractual period; (ii) by nationalization: (iii) by forfeiture.	Interruption and/or cancellation of the supply of energy from the hydroelectric plant.
Concessions	Concession for the utilization of hydraulic energy PCH Nova Maurício	2021	(i) termination of the contractual period.	Interruption and/or cancellation of the supply of energy from the small hydroelectric plant.
Concessions	Concession for the utilization of hydraulic energy PCH Glória	2021	(i) termination of the contractual period.	Interruption and/or cancellation of the supply of energy from the small hydroelectric plant.

Table of Contents

Type of asset	Description of asset	Duration	Events which might cause a loss of rights	Consequences of loss of rights
Concessions	Concession for the utilization of hydraulic energy PCH Ituerê	2021	(i) termination of the contractual period.	Interruption and/or cancellation of the supply of energy from the small hydroelectric plant.
Concessions	Concession for the utilization of hydraulic energy PCH Mello	2025	(i) termination of the contractual period.	Interruption and/or cancellation of the supply of energy from the small hydroelectric plant.
Trademarks	Registration of Mixed Trademark Vale	2017	Within the administrative sphere (the Brazilian National Institute for Industrial Property INPI), the registration of trademarks already granted may be contested through nullification procedures or be subject to petitions for partial or total cancellation under the allegation that the trademark is not being used in the way that the registration was granted. In the judicial sphere, third parties may sue for the nullification of trademark registrations alleging violation of their rights to industrial property. Trademark registrations are maintained by periodic payments to INPI. The payment of the fees due and the continual use of the trademarks are indispensable to avoid the termination of their registration and the consequent cessation of the rights of the holder.	The loss of rights to trademarks results in the impossibility of stopping third parties from using identical or similar trademarks to brand even competing products and services, since the holder loses the right to the exclusive use of them. There also exists the possibility that the holder be subject to criminal and civil lawsuits for improper use, in the case of the violation of the rights of third parties, resulting in the impossibility of using the trademarks when carrying out its activities. It is not possible to quantify the impact of these events.

Table of Contents

			Additional information in the Duration field: 2017 (extendible every 10 years)	

Type of asset	Description of asset	Duration	Events which might cause a loss of rights	Consequences of loss of rights
Licenses/Domain name in the world wide web	Domain name in the world wide web: Vale.com.br	9/16/2018	The loss of rights related to such assets relates to: (i) lack of payment to maintain the domain; (ii) finding that at registration or later, there was use of false CNPJ, CPF, corporate name, or invalid, incorrect, or outdated; (iii) failure to timely comply with the provision of documents; (iv) by court order; and (v) by express request of the applicant of the domain registration.	It is not possible to quantify the impact; however, it is certain that with the loss of the domain name, this could be registered by third parties.

Table of Contents

Type of asset	Description of asset	Duration	Events which might cause a loss of rights	Consequences of loss of rights
Licenses/Domain name in the world wide web	Domain name in the world wide web: Vale.com	10/7/2020	The loss of rights related to such assets relates to: (i) lack of payment to maintain the domain; (ii) finding that at registration or later, there was use of false CNPJ, CPF, corporate name, or invalid, incorrect, or outdated; (iii) failure to timely comply with the provision of documents; (iv) by court order; and (v) by express request of the applicant of the domain registration.	It is not possible to quantify the impact; however, it is certain that with the loss of the domain name, this could be registered by third parties.

Table of Contents

9.1 - Relevant non-current assets / 9.1.c Participation in Corporations

Corporate Name	CNPJ (Corporate Tax ID)	CVM Code	Type of Corporation	HQ - Country	HQ - State	HQ - Municipality	Issuer participation (%)
Aços Laminados do Pará S.A.	10.335.963/0001-08		Controlled company	Brazil	RJ	Rio de Janeiro	100.000000

Description of activities Develop studies for technical-economic viability, as well as market studies, business plans, and other related studies to build an integrated steel plant in Marabá (Project), in the State of Pará, dedicated to the production of steel, including one or more plants for sintering, coking, high furnace, steel mill, and machines for ingot casting/finishing for the Project. The studies will also include market, engineering, and environmental assessments, budgets, and fiscal and economic analysis (the Project Study). Acquire the premises where the Project will be installed and sign the necessary agreements for said acquisition. Obtain the required licenses for the implementation of the Project, including, but not limited to the environmental licenses. Negotiate all commercial agreements that are necessary for the implementation of the Project, including the supply of iron ore/pellets, contracts for the supply of coal, of ferroalloys, and contracts for the supply of logistic services, among others.

Year	Book value	variation (%)	Market value variation (%)	Amount of dividends received (Reais)	Market Value Date	Market Value Value (R$)	Book Value Date	Book Value Value (R$)
12/31/2015		2.108434	0.000000	0.00				
12/31/2014		3.426791	0.000000	0.00	12/31/2015	0.00	12/31/2015	339,000,000.00
12/31/2013		0.626959	0.000000	0.00				

Reasons for buying and holding that participation Encourage the consumption of iron ore in Brazil through investment in the iron and steel company.

Table of Contents

Corporate Name	CNPJ (Corporate Tax ID)	CVM Code	Type of Corporation	HQ - Country	HQ - State	HQ - Municipality	Issuer participation (%)
Biopalma da Amazônia S.A., Reflorestamento, Indústria e Comércio.	08.581.205/0001-10		Controlled company	Brazil	PA	Belém	93.900000

Description of activities Biopalma is a privately-owned corporation which main activities relate to growing palm and other vegetables and extraction, processing, and sale of their oils

Year	Book value variation (%)	Market value variation (%)	Amount of dividends received (Reais)	Market Value Date	Market Value Value (R$)	Book Value Date	Book Value Value (R$)
12/31/2015	-32.507740	0.000000	0.00				
12/31/2014	15.563506	0.000000	0.00	12/31/2015	0.00	12/31/2015	436,000,000.00
12/31/2013	60.171920	0.000000	0.00				

Reasons for buying and holding that participation Exploration of the palm oil production complex located in the State of Pará

Corporate Name	CNPJ (Corporate Tax ID)	CVM Code	Type of Corporation	HQ - Country	HQ - State	HQ - Municipality	Issuer participation (%)
California Steel Industries, Inc.	00.000.000/0000-00		Affiliate	United States			50.000000

Description of activities Exploration of any type of activity that is legal in the State of Delaware.

Year	Book value variation (%)	Market value variation (%)	Amount of dividends received (Reais)	Market Value Date	Market Value Value (R$)	Book Value Date	Book Value Value (R$)
12/31/2015	25.357873	0.000000	0.00				
12/31/2014	15.058824	0.000000	0.00	12/31/2015	0.00	12/31/2015	613,000,000.00
12/31/2013	24.269006	0.000000	0.00				

Reasons for buying and holding that participation Relaminating operations in the USA.

Table of Contents

Corporate Name	CNPJ (Corporate Tax ID)	CVM Code	Type of Corporation	HQ - Country	HQ - State	HQ - Municipality	Issuer participation (%)
Companhia Coreano-Brasileira de Pelotização Kobrasco	33.931.494/0001-87		Controlled	Brazil	ES	Vitória	50.000000

Description of activities Production and marketing of iron ore pellets, as well as the performance of other activities directly or indirectly related to its purpose, including the import, export, and provision of services of any nature. The company is also able to participate, in any manner, in other companies

Year	Book value variation (%)	Market value variation (%)	Amount of dividends received (Reais)	Market Value Date	Market Value Value (R$)	Book Value Date	Book Value Value (R$)
12/31/2015	6.140351	0.000000	67,000,000.00				
12/31/2014	7.042254	0.000000	39,000,000.00	12/31/2015	0.00	12/31/2015	242,000,000
12/31/2013	-2.293580	0.000000	47,000,000.00				

Reasons for buying and holding that participation Production and sale of iron ore pellets and performing any activity directly or indirectly related to the production and sale of iron ore pellets. The company may also participate in any other industrial and/or commercial activities correlated with its main purpose, as well as participate in other undertakings in Brazil.

Corporate Name	CNPJ (Corporate Tax ID)	CVM Code	Type of Corporation	HQ - Country	HQ - State	HQ - Municipality	Issuer participation (%)
Companhia Hispano-Brasileira de Pelotização Hispanobrás	27.240.092/0001-33		Controlled	Brazil	ES	Vitória	50.890000

Description of activities Production and sale of iron ore pellets and performing any activity directly or indirectly related to the production and sale of iron ore pellets. The company may also participate in any other industrial and/or commercial activities correlated with its main purpose, as well as participate in other undertakings in Brazil.

Year	Book value variation (%)	Market value variation (%)	Amount of dividends received (Reais)	Market Value Date	Market Value Value (R$)	Book Value Date	Book Value Value (R$)
12/31/2015	4,225352	0.000000	44,000,000.00				
12/31/2014	8.673469	0.000000	25,000,000.00	12/31/2015	0.00	12/31/2015	222,000,000.00
12/31/2013	-7.981221	0.000000	20,000,000.00				

Reasons for buying and holding that participation Expansion of Vale s participation in the pellet market in Brazil

Table of Contents

Corporate Name	CNPJ (Corporate Tax ID)	CVM Code	Type of Corporation	HQ - Country	HQ - State	HQ - Municipality	Issuer participation (%)
Companhia Ítalo-Brasileira de Pelotização Itabrasco	27.063.874/0001-44		Controlled	Brazil	ES	Vitória	50.900000

Description of activities Production and sale of iron ore pellets and performing any activity directly or indirectly related to the production and sale of iron ore pellets. The company may also participate in any other industrial and/or commercial activities correlated with its main purpose, as well as participate in other undertakings in Brazil.

Year	Book value variation (%)	Market value variation (%)	Amount of dividends received (Reais)	Market Value Date	Market Value Value (R$)	Book Value Date	Book Value Value (R$)
12/31/2015	19.753086	0.000000	36,000,000,00				
12/31/2014	11.724138	0.000000	13,000,000.00	12/31/2015	0.00	12/31/2015	194,000,000.00
12/31/2013	11.538462	0.000000	0.00				

Reasons for buying and holding that participation Expansion of Vale s participation in the pellet market in Brazil

Corporate Name	CNPJ (Corporate Tax ID)	CVM Code	Type of Corporation	HQ - Country	HQ - State	HQ - Municipality	Issuer participation (%)
Companhia Nipo-Brasileira de Pelotização Nibrasco	27.251.842/0001-72		Affiliate	Brazil	ES	Vitória	51.000000

Description of activities Production and sale of iron ore pellets and performing any activity directly or indirectly related to the production and sale of iron ore pellets. The company may also participate in any other industrial and/or commercial activities correlated with its main purpose, as well as participate in other undertakings in Brazil

Table of Contents

Year	Book value variation (%)	Market value variation (%)	Amount of dividends received (Reais)	Market Value Date	Market Value Value (R$)	Book Value Date	Book Value Value (R$)
12/31/2015	7.407407	0.000000	102,000,000.00				
12/31/2014	1.612903	0.000000	114,000,000.00	12/31/2015	0.00	12/31/2015	406,000,000.00
12/31/2013	2.197802	0.000000	51,000,000.00				

Reasons for buying and holding that participation Expansion of Vale s participation in the pellet market in Brazil.

Corporate Name	CNPJ (Corporate Tax ID)	CVM Code	Type of Corporation	HQ - Country	HQ - State	HQ - Municipality	Issuer participation (%)
Companhia Portuária da Baia de Sepetiba	72.372.998/0001-66		Controlled	Brazil	RJ	Rio de Janeiro	100.000000

Description of activities The construction and utilization of a port facility for private, mixed use, located within the area of Porto de Sepetiba, Rio de Janeiro, specialized in moving and storage of iron ore and its derivatives. Secondarily and with a complementary character, the company may carry out port operations with other dry bulks, as long as these complementary operations do not interfere with the main operations. It is forbidden for the company to perform any activity different from its purpose, except with the express authorization of Companhia Docas do Rio de Janeiro CDRJ.

Year	Book value variation (%)	Market value variation (%)	Amount of dividends received (Reais)	Market Value Date	Market Value Value (R$)	Book Value Date	Book Value Value (R$)
12/31/2015	37.922078	0.000000	188,000,000.00				
12/31/2014	2;122016	0.000000	341,000,000.00	12/31/2015	0.00	12/31/2015	531,000,000.00
12/31/2013	16;960352	0.000000	263,000,000.00				

Reasons for buying and holding that participation Supply port services for iron ore operations.

Table of Contents

Corporate Name	CNPJ (Corporate Tax ID)	CVM Code	Type of Corporation	HQ - Country	HQ - State	HQ - Municipality	Issuer participation (%)
Henan Longyu Energy Resources Co. Ltd.	00.000.000/0000-00		Affiliate	China			25.000000

Description of activities Exploration and development of coal resources; producing, washing, processing, trading, and selling (including exportation) of coal and other related products; use, for different purposes, of the natural resources of coal; manufacturing and repair of mechanical and electrical equipment for mining, rental of equipment, and treatment of waste; and supply of post-sale technical and advisory services regarding the items above. The company can adjust its corporate purpose, based on the needs to develop the business and its own capacity, through the approval by the general meeting of shareholders and the competent government authorities.

Year	Book value variation (%)	Market value variation (%)	Amount of dividends received (Reais)	Market Value Date	Market Value Value (R$)	Book Value Date	Book Value Value (R$)
12/31/2015	26.617179	0.000000	109,000,000.00				
12/31/2014	12.934132	0.000000	75,000,000.00	12/31/2015	0.00	12/31/2015	1,194,000,000.00
12/31/2013	19.799139	0.000000	90,000,000.00				

Reasons for buying and holding that participation Hold interest in company that owns coal assets in China

Corporate Name	CNPJ (Corporate Tax ID)	CVM Code	Type of Corporation	HQ - Country	HQ - State	HQ - Municipality	Issuer participation (%)
Mineração Corumbaense Reunida S.A. MCR	03.327.988/0001-96		Controlled	Brazil	MS	Corumbá	100.000000

Description of activities Investigate and research ores and minerals; utilize and administer mine and mineral resources in general; obtain research permits and mining concessions for all kinds of ores and minerals under the terms of the laws regarding these matters; purchase and lease land, equipment, and facilities, including rights and interests in the subsoil and on the surface; purchase, sell, improve, process, refine, industrialize, import and export, market, and transport by rail, road and/or sea, ores, minerals, and metals of any kind whatsoever, on its own behalf or that of third parties; purchase and sell any and all manufactured products, machinery, and equipment related to the activities listed above; represent other companies, domestic and foreign; and participate in other commercial or civil companies, either as a partner, shareholder, or quota holder.

Year	Book value variation (%)	Market value variation (%)	Amount of dividends received (Reais)	Market Value Date	Market Value Value (R$)	Book Value Date	Book Value Value (R$)
12/31/2015	97.150611	0.000000	147,000,000.00				
12/31/2014	11.944870	0.000000	456,000,000.00	12/31/2015	0.00	12/31/2015	46,000,000.00
12/31/2013	4.322344	0.000000	279,000,000.00				

Table of Contents

Reasons for buying and holding that participation Expansion of Vale s participation in the market for granulated iron ore.

Corporate Name	CNPJ (Corporate Tax ID)	CVM Code	Type of Corporation	HQ - Country	HQ - State	HQ - Municipality	Issuer participation (%)
Minerações Brasileiras Reunidas S.A. MBR	33.417.445/0001-20		Controlled	Brazil	MG	Nova Lima	62.50000

Description of activities The mineral extraction industry, including prospecting and mining; provision of technical services specially to mining companies; transportation, processing, shipping, and sale of ores, for its own account or that of third parties; export and import of ores; participation in other companies, especially those whose objective is mining or transportation, processing, and shipping and sale of ores; provision of transport services; port and fluvial support.

Year	Book value variation (%)	Market value variation (%)	Amount of dividends received (Reais)	Market Value Date	Market Value Value (R$)	Book Value Date	Book Value Value (R$)
12/31/2015	25.918093	0.000000	324,000,000.00				
12/31/2014	15.577778	0.000000	0.00	12/31/2015	0.00	12/31/2015	6,549,000,000.00
12/31/2013	8.000000	0.000000	341,000,000.00				

Reasons for buying and holding that participation Running iron ore operations in Brazil.

Table of Contents

Corporate Name	CNPJ (Corporate Tax ID)	CVM Code	Type of Corporation	HQ - Country	HQ - State	HQ - Municipality	Issuer participation (%)
MRS Logística S.A.	01.417.222/0001-77	1794-9	Affiliate	Brazil	RJ	Rio de Janeiro	47.590000

Description of activities Provide rail transport services for cargo; operate services for loading, unloading, warehousing, and transshipment at the stations, yards, and land within the range of existing railway lines which are object of the concession; run modal transport related to rail transport; serve, as per the law, as a port operator, and run services and operations for moving and storage of goods destined for or coming from water transport; participate in projects that aim to promote the socio-economic development of the areas of influence and seek to expand rail services offered; perform all similar or related activities to those described above; and engage in other activities that utilize the infrastructure of the Company as a base.

Year	Book value variation (%)	Market value variation (%)	Amount of dividends received (Reais)	Market Value Date	Market Value Value (R$)	Book Value Date	Book Value Value (R$)
12/31/2015	5,977860	0.000000	87,000,000.00				
12/31/2014	2.496218	0.000000	108,000,000.00	12/31/2015	0.00	12/31/2015	1,436,000,000.00
12/31/2013	10.442774	0.000000	149,000,000.00				

Reasons for buying and holding that participation Provide logistics services for iron ore and pellet operations.

Corporate Name	CNPJ (Corporate Tax ID)	CVM Code	Type of Corporation	HQ - Country	HQ - State	HQ - Municipality	Issuer participation (%)
Salobo Metais S.A.	33.931.478/0001-94		Controlled	Brazil	RJ	Rio de Janeiro	100.000000

Description of activities Utilization of mineral resources within Brazil, particularly the Salobo deposit, located in the Serra dos Carajás in the district and municipality of Marabá in the State of Pará, the subject of Mining Ordinance No. 1121 of 14/Jul/87, including the mining, processing, smelting, refining, transport, and marketing of copper, gold, and their by-products

Year	Book value variation (%)	Market value variation (%)	Amount of dividends received (Reais)	Market Value Date	Market Value Value (R$)	Book Value Date	Book Value Value (R$)
12/31/2015	7.574760	0.000000	0.00				
12/31/2014	6.615169	0.000000	0.00	12/31/2015	0.00	12/31/2015	8,166,000,000.00
12/31/2013	12.249724	0.000000	0.00				

Reasons for buying and holding that participation Running the Salobo copper deposit operations in Brazil.

Table of Contents

Corporate Name	CNPJ (Corporate Tax ID)	CVM Code	Type of Corporation	HQ - Country	HQ - State	HQ - Municipality	Issuer participation (%)
Samarco Mineração S.A.	16.628.281/0001-61		Affiliate	Brazil	MG	Belo Horizonte	50.000000

Description of activities Prospecting and mining of ores throughout Brazil; processing and marketing of ores; transport and navigation within the port, including for third parties; and importation of equipment for its own use, spare parts, and raw materials, production and distribution of power and sale of coal, and the company may also hold interest in other companies as shareholder or quota holder.

Year	Book value variation (%)	Market value variation (%)	Amount of dividends received (Reais)	Market Value Date	Market Value Value (R$)	Book Value Date	Book Value Value (R$)
12/31/2015	0,000000	0.000000	459,000,000.00				
12/31/2014	0,000000	0.000000	906,000,000.00	12/31/2015	0.00	12/31/2015	0.00
12/31/2013	0,000000	0.000000	1,323,000,000.00				

Reasons for buying and holding that participation Expansion of Vale s participation in the market for iron ore and pellets in Brazil.

Corporate Name	CNPJ (Corporate Tax ID)	CVM Code	Type of Corporation	HQ - Country	HQ - State	HQ - Municipality	Issuer participation (%)
Thyssenkrupp CSA Cia. Siderúrgica do Atlântico	07.005.330/0001-19		Affiliate	Brazil	RJ	Rio de Janeiro	26.870000

Description of activities Construction and operation of an integrated plant for the production, selling, and transformation of iron and steel products, as well as the production, transformation, and selling of all by-products related to the working of the plant, including the importation and exportation of all products, inputs, and capital assets of the plant; construction, management, operation, and utilization of a commercial complex of port operations, including operation as a Brazilian shipping company in performing shipping services, port support, and carrying out drainage services; construction, administration, operation, and utilization of a thermoelectric plant; creation of subsidiaries, as well as the participation in any other company, consortium, or entity in Brazil or abroad for achieving the business purpose; and development, within Brazilian or abroad, of any other activity that is directly or indirectly related to the achievement of the business purpose of the company.

Table of Contents

Year	Book value variation (%)	Market value variation (%)	Amount of dividends received (Reais)	Market Value Date	Market Value Value (R$)	Book Value Date	Book Value Value (R$)
12/31/2015	0,000000	0.000000	0.00				
12/31/2014	0,000000	0.000000	0.00	12/31/2015	0.000000	12/31/2015	0.00
12/31/2013	0,000000	0.000000	0.00				

Reasons for buying and holding that participation Encourage the consumption of iron ore in Brazil through the investment in a company that manufactures steel sheets.

Corporate Name	CNPJ (Corporate Tax ID)	CVM Code	Type of Corporation	HQ - Country	HQ - State	HQ - Municipality	Issuer participation (%)
Vale International Holdings GMBH	00.000.000/0000-00		Controlled	Austria			100.000000

Description of activities Acquisition and management of shares and participation in companies associations of any kind and investments in assets; control and management of one or more activities related to any of the companies in which it participates or the assets in which it has investments; exercise of any and all activities which are necessary or useful in order to reach the above-mentioned purposes.

Year	Book value variation (%)	Market value variation (%)	Amount of dividends received (Reais)	Market Value Date	Market Value Value (R$)	Book Value Date	Book Value Value (R$)
12/31/2015	83.427159	0.000000	0.00				
12/31/2014	-48.075004	0.000000	0.00	12/31/2015	0.000000	12/31/2015	13,359,000,000,00
12/31/2013	60.502868	0.000000	0.00				

Reasons for buying and holding that participation *Holding* of a company that exploits minerals world-wide.

Corporate Name	CNPJ (Corporate Tax ID)	CVM Code	Type of Corporation	HQ - Country	HQ - State	HQ - Municipality	Issuer participation (%)
Vale Canada Limited	00.000.000/0000-00		Controlled	Canada			100.000000

Description of activities The global activities of Vale Canada Limited are managed from headquarters in Toronto, in the Canadian province of Ontario, which continues its corporate functions and has significant local involvement.

Table of Contents

Year	Book value variation (%)	Market value variation (%)	Amount of dividends received (Reais)	Market Value Date	Market Value Value (R$)	Book Value Date	Book Value Value (R$)
12/31/2015	-22.853599	0.000000	0.00				
12/31/2014	12.722659	0.000000	0.00	12/31/2015	0.00	12/31/2015	16,794,000,000.00
12/31/2013	101.691906	0.000000	0.00				

Reasons for buying and holding that participation Running nickel and by-products operations (copper, cobalt, platinum group metals, and other precious metals) in Canada, the United Kingdom, and Indonesia.

Corporate Name	CNPJ (Corporate Tax ID)	CVM Code	Type of Corporation	HQ - Country	HQ - State	HQ - Municipality	Issuer participation (%)
Vale International S.A.	00.000.000/0000-00		Controlled	Switzerland			100.000000

Description of activities Buy, own, manage, and sell direct or indirect holdings in companies or businesses, especially abroad; trade and distribute the products of companies within the group, develop relationships with customers, and provide technical assistance, including product development and production planning, to customers and companies of the group throughout the world; perform research and development activities in the sectors of mining, logistics, and energy; finance companies and businesses of the group and provide business, financial, administrative, and legal services to other companies and businesses of the group in Switzerland and abroad. The company may conduct any activities that have a relation to its business objective, or support them, especially as regards managing and defining ownership rights and/or licensing of patents, trademarks of any kind, know-how and other intellectual property rights, and buy, hold, and sell real estate.

Year	Book value variation (%)	Market value variation (%)	Amount of dividends received (Reais)	Market Value Date	Market Value Value (R$)	Book Value Date	Book Value Value (R$)
12/31/2015	18.715821	0.000000	0.00				
12/31/2014	-27.720040	0.000000	0.00	12/31/2015		12/31/2015	25,182,000,000.00
12/31/2013	-19.229330	0.000000	0.00				

Reasons for buying and holding that participation Perform financial transactions and business activities.

Corporate Name	CNPJ (Corporate Tax ID)	CVM Code	Type of Corporation	HQ - Country	HQ - State	HQ - Municipality	Issuer participation (%)
Vale Manganês S.A.	15.144.306/0001-99		Controlled	Brazil	BA	Congonhas	100.000000

Description of activities The steel industry, metallurgy, industry, and sale of ferroalloys; utilization, for its own account or in combination with other companies, of mineral deposits, including prospecting, mining, processing, transportation, sale, import, and export of mineral substances; reforestation; extraction, production, sale, import, and export of wood and charcoal and other goods of mineral or vegetable origin used in its production processes and their derivatives and by-products; import and export of goods related to or required for its activities, including equipment, inputs, and miscellaneous materials; any other related activities that do not conflict with its business purpose or with prevailing legislation

Table of Contents

Year	Book value variation (%)	Market value variation (%)	Amount of dividends received (Reais)	Market Value Date	Market Value Value (R$)	Book Value Date	Book Value Value (R$)
12/31/2015	-6.241331	0.000000	0.00				
12/31/2014	8.421053	0.000000	0.00	12/31/2015	0.00	12/31/2015	676,000,000.00
12/31/2013	-3.202329	0.000000	0.00				

Reasons for buying and holding that participation Running ferroalloy and manganese operations in Brazil

Corporate Name	CNPJ (Corporate Tax ID)	CVM Code	Type of Corporation	HQ Country	HQ - State	HQ - Municipality	Issuer participation (%)
Vale Soluções em Energia S.A. - VSE	09.327.793/0001-22		Affiliate	Brazil	RJ	Rio de Janeiro	53.12870

Description of activities Research and development of technologies in order to obtain systems and products ecologically efficient for the generation of energy, as well as the development and test of prototypes; development of technical and economic viability studies related to the business purpose of the company, as well as market studies, business plans, and other related studies; participation as a partner or shareholder in other simple or business companies and in business undertakings of any nature, including partnerships, in Brazil and/or abroad; development, manufacturing, construction, purchase, sale, distribution, renting, gratuitous loan, importation, and exportation of machines and equipment for the industry, including accessories, parts, and other materials that are necessary in order to obtain ecologically efficient products for generating energy; and rendering services for the assembly, maintenance, and technical assistance of machines and equipment for the generation of energy.

Year	Book value variation (%)	Market value variation (%)	Amount of dividends received (Reais)	Market Value Date	Market Value Value (R$)	Book Value Date	Book Value Value (R$)
12/31/2015	0.00000	0.000000	0.00				
12/31/2014	0.00000	0.000000	0.00	12/31/2015	0.00	12/31/2015	-79,646,000.00
12/31/2013	0.00000	0.000000	0.00				

Reasons for buying and holding that participation Develop power generation systems.

Table of Contents

Corporate Name	CNPJ (Corporate Tax ID)	CVM Code	Type of Corporation	HQ - Country	HQ - State	HQ - Municipality	Issuer participation (%)
Vale Fertilizantes S.A.	33.931.486/0001-30		Controlled	Brazil	SP	São Paulo	100.000000

Description of activities The purpose of Vale Fertilizantes S.A. (Company), formerly known as Mineração Naque S.A. (Naque), which new name was approved by the Shareholders Meeting held on May 15, 2012, is mining activity in general, the use of mineral deposits in domestic and foreign lands, by research, extraction, processing, concentration, industrialization, transportation, shipping, and sale of goods for animal nutrition, chemical products, input of above mentioned products and other agriculture and cattle-raising products, as well as activities arising out of the development of the production, industrialization, and sale of such products and others.

Year	Book value variation (%)	Market value variation (%)	Amount of dividends received (Reais)	Market Value Date	Market Value Value (R$)	Book Value Date	Book Value Value (R$)
12/31/2015	11.242692	0.000000	0.00				
12/31/2014	-2.974329	0.000000	0.00	12/31/2015	0.00	12/31/2015	14,842,000,000.00
12/31/2013	2.588779	0.000000	0.00				

Reasons for buying and holding that participation Conduct and promote Vale business in the fertilizer segment.

Corporate Name	CNPJ (Corporate Tax ID)	CVM Code	Type of Corporation	HQ - Country	HQ - State	HQ - Municipality	Issuer participation (%)
VLI S.A.	12.563.794/0001-80		Affiliate	Brazil	SP	São Paulo	37,610000

Description of activities The corporate purpose of VLI S.A is the provision of integrated cargo railroad and road transportation services, construction, conservation, maintenance, monitoring, operation, and exploration of railroads and/or railroad traffic, of its own or third parties, construction, conservation, maintenance, monitoring, operation of its own maritime terminals or third parties , exploration with owned or third party vessels the long-course maritime trade, seaborne and river borne in general cargo transportation, including port support navigation, exploration of activities directly or indirectly related to cargo transportation services.

Table of Contents

Year	Book value variation (%)	Market value variation (%)	Amount of dividends received (Reais)	Market Value Date	Market Value Value (R$)	Book Value Date	Book Value Value (R$)
12/31/2015	3.157895	0.000000	25,000,000.00				
12/31/2014	100.000000	0.000000	0.00	12/31/2015	0.00	12/31/2015	3,038.000.000,00
12/31/2013	0.000000	0.000000	0.00				

Reasons for buying and holding that participation Integrated cargo transportation.

Table of Contents

9.2 Other Relevant Information

As of December 31, 2015, Vale considered as intangibles assets of Intellectual Property a total of 6,553 processes throughout the world, in a total of 172 countries (155 patents in Brazil and 1,003 abroad; 925 trademark processes in Brazil and 1,642 abroad; and 2,151 domain names in Brazil and 604 abroad; and 72 software in Brazil and 1 abroad).

10. Director Comments

10.1. General Financial and Equity Conditions

Financial information included in this Reference Form, except expressly otherwise noted, refers to consolidated financial statements of years ending on December 31, 2013, 2014, and 2015.

Information in this item 10 in the Reference Form should be read and analyzed jointly with our consolidated financial statements, available at our website (www.vale.com.br) and the website of Comissão de Valores Mobiliários (www.cvm.gov.br).

a. General Financial and Equity Conditions

On December 31, 2015, Vale net operational revenue was R$ 85.5 billion and the operational margin (prior to the recoverable values of noncurrent assets and loss in the measuring of the sale of noncurrent assets) was 10.6%. The operational loss was R$ 25.4 billion, mainly due to a drop in the prices of its products. This year, that Company has sought after several opportunities to reduce costs. Vale has presented an 18.2% reduction in net operational revenues (including SG&A, research and development, pre-operational and stoppage, and other expenses), corresponding to R$ 1,724 billion, compared to the same period in 2014, especially marked by the revenue arising out of the *gold stream* operation in the amount of R$ 722 million and provision reversion to fixed assets retirement, in the amount of R$ 1,281 billion, due to rate change due to risk change. Additionally, Vale has had an increase in impairment of assets , to R$ 34,553 billion compared to R$ 2,713 billion in 2014. Cash generation, measured by Adjusted EBITDA(1), was R$ 23.7 billion in 2015.

On December 31, 2014, Vale net operational revenue was R$ 88.3 million, and the operational margin (prior to the recoverable values of noncurrent assets and loss in the measuring of the sale of noncurrent assets) was 22.3%. The operational profit was R$ 16.6 billion in 2014, an approximate 50% reduction compared to the operational profit in 2013, mainly due to a drop in ore prices. Continuous Company efforts to cut costs, investment discipline and focus on core business were seen this year. Vale had a 11.9% reduction in net operational costs (including

(1) Adjusted EBITDA is the operational profit or loss added with dividends received from affiliates and *joint ventures* and excluding depreciation, depletion, and amortization, impairment, contracts and resulting in the measurement or sale of noncurrent assets.

Table of Contents

SG&A, research and development, pre-operational and stoppage, as well as other costs), corresponding to R$ 1,277 billion, relative to 2013. This drop was due mainly to the reduction of costs related to operation stoppage and optimization in the Company s cost structure, after adjustments made in 2013. Additionally, in 2014, Vale had a reduction of 49.7% in the impairment of assets, R$ 5,390 billion in 2013 to R$ 2,713 billion in 2014, due to return on the Onça Puma operation. Cash generation, measured in Adjusted EBITDA(1), was R$ 31.1 billion in 2014.

In 2013, Vale net operational revenue was R$ 101,490 billion and the operational margin (prior to the recoverable values of noncurrent assets and loss in the measuring of the sale of noncurrent assets) was 37.7%. The operational profit was R$ 32,340 billion in 2013. In 2013, as a result of the Company s focus on investments in world-class assets, several adjustments were made, among the non-realization of the potash project (PRC) in Argentina, and the sale of the company Tres Valles, as described in Explanatory Note no. 7 of the Company s 2013 consolidated accounting statements. Besides, Vale also reported an operation in the Tax Recovery Program REFIS, which substantially involved all of the claims related to income tax collection and social contributions on capital gains of subsidiary and associated companies

Table of Contents

abroad, whose loss expectations were classified as possible. Such factors negatively affected the Company financial performance in 2013, resulting in financial indicators reduction relative to what was obtained in 2012. In this scenario, the Company had a net loss of R$ 258 million in 2013; relative to net profit of R$ 9.4 billion in 2012.

The sale of *ferrous minerals* - iron ore, pellets, manganese ore and ferroalloy represented 64.8% of total net operating revenues in the year ended on December 31, 2015, relative to 68.4% in the year ended on December 31, 2014. In 2013, the total net operational revenue of ferrous minerals was 74.6%.

Base metals participation in the total net revenue was 24.0% in 2015 compared to 20.6% in 2014. In 2013, the base metals participation in net revenue was 15.5%.

For the years of 2015, 2014 and 2013, the fertilizer revenue in total net revenue was 8.7%, 6.4% and 6.0%, respectively.

Other products represented 2.5% of the 2014 total operating net revenue in 2015, relative to 4.6% in 2014. In 2013, the contribution of other products to the total net operational revenue was 3.9%.

	Fiscal Year Ending on December 31 of:		
Business segments	**2013**	**2014**	**2015**
Ferrous minerals	74.6%	68.4%	64.8%
Base metals	15.5%	20.6%	24.0%
Fertilizers	6.0%	6.4%	8.7%
Others	3.9%	4.6%	2.5%
Total	**100.0%**	**100.0%**	**100.0%**

On December 31, 2015, the gross debt of the Company (understood as the sum of loans and financing of our current liabilities and non-current liabilities) summed R$ 112,666 billion, compared to R$ 76,517 billion, on December 31, 2014, representing a 47.2% increase, mainly due to depreciation of real compared to the US dollar. Despite the increase in gross debt in reais for that period, the gross debt in US dollars had an increase lower than the increase of the gross debt in Reais, namely, 0.2%, from US$ 28,807 billion on December 31, 2014 to US$ 28,853 billion on December 31, 2015. On December 31, 2014 and 2013, the gross debt summed R$ 76,517 billion and R$ 68,977 billion, respectively, and the 10.9% increase perceived between those fiscal years was due to depreciation of real compared to the US dollar. Despite the increase in gross debt in the period between December 31, 2013 and December 31, 2014, the absolute debt in dollars decreased a little, from US$ 29.655 billion on December 31, 2013 to US$ 28.807 billion on December 31, 2014.

Table of Contents

On December 31, 2015, the current liquidity index of the Company (which is the index found by dividing the current asset by the current liability) was 1.09, compared to 1.56 on December 31, 2014 and 2.25 on December 31, 2013. The decrease in the liquidity index in 2015 compared to the previous fiscal year was mainly due to increase in Company debt due to depreciation of real compared to the US dollar, with impact on the debt expressed in dollars. In turn, the drop in liquidity on December 31, 2014, compared to December 31, 2013 resulted mainly from lower cash generation from operational activities due to the lower price of most *commodities* sold by the Company.

On December 31, 2015 the Company had controlling shareholders equity of R$ 131,160 billion, compared to 146,414 billion on December 31, 2014.

Table of Contents

Shareholders equity suffered 10.4% reduction, mainly due to absorption of loss in 2015 with reserves. On December 31, 2013, the controlling shareholders equity was R$ 148,346 billion, that is, 1.3% lower than the net equity on December 31, 2014, mainly justified by the use of the net profit of the year to pay the shareholders compensation and set forth provisions.

In 2015, 2014, and 2013, Vale delivered to its shareholders dividends in the amount of US$ 1.5 billion (R$ 5.0 billion), US$ 4.2 billion (R$ 9.7 billion), and US$ 4.5 billion (R$ 9.3 billion), respectively.

b. Capital Structure

The table below presents the funding standard adopted for Company activities, considering equity and third party capital:

	Fiscal year ended on December 31 of:		
R$ billion	**2015**	**2014**	**2013**
Third party capital (liabilities + noncurrent liabilities)	206,128	159,814	139,760
Equity (shareholders equity)	139,419	149,601	152,121
Total Capital (third party + equity)	345,547	309,415	291,881

c. Payment Capacity in Relation to the Financial Commitments Assumed

(1) The leverage, measured by the gross debt/ /adjusted(2) EBITDA, showed decrease in the fiscal year ending on December 31, 2015 compared to the fiscal year ended on December 31, 2014, especially due to drop in the price of *commodities*, as the following table illustrates:

(2)

	Fiscal year ended on December 31 of:		
(in R$ million, except %)	**2015**	**2014**	**2013**
Net profit (loss) for the year	(45,997)	219	(258)
(+) Income tax and social contribution	(18,879)	2,600	15,249
(+) finance results	36,538	14,753	18,442
EBIT	(28,338)	17,572	33,433
(+) Depreciation, amortization and depletion	13,489	10,108	8,953
EBITDA	(14,849)	27,680	42,386
Equity held on *joint ventures* and affiliates	1,507	(1,141)	999
Impairment of noncurrent assets and investments	34,553	2,713	5,390
Impairment of equity on joint ventures and affiliates	1,727	71	0
Gains from the sale of equity on joint ventures and affiliates	(296)	68	(98)

(Gain) loss in the realization of noncurrent assets held for sale	(52)	441	508
Dividends received	1,064	1,302	1,836
Discontinued operations			4
Adjusted EBITDA	23,654	31,134	49,027
Dividends received	(1,064)	(1,302)	(932)
Depreciation, amortization and depletion	(13,489)	(10,108)	(8,953)
Adjusted EBIT	9,101	19,724	38,238

(2) Adjusted EBITDA is used by the Company management to help in the decision-making process of segments. The definition of Adjusted EBITDA is operational loss or profit added with dividends received from affiliates or joint ventures, excluding depreciation, depletion, and amortization, impairment, agreements, and result of measurement or sale of noncurrent assets

Table of Contents

in R$ billion	2015	2014	2013
Gross debt	112,666	76,517	68,977
Leverage, measured by gross debt/Adjusted EBITDA ratio	4.8	2.5	1.4

(3)

(4) The gross debt/ Adjusted EBITDA (4.8 on December 31, 2015 compared to 2.5 on December 31, 2014 and 1.4 on December 31, 2013. The increase of this index in the period between December 31, 2013 and 2015, is due to decrease on the price of commodities and depreciation of real compared to the US dollar.

(5)

(6) The index of interest coverage, measured by the indicator EBITDA adjusted/payment of interest, was 4.3x on December 31, 2015, 7.6x on December 31, 2014, 14.4x on December 31, 2013. The decrease of this index in the period between December 31, 2013 and 2015, is due to decrease in EBITDA, with impact from the drop on the price of commodities in the international market and the impact of foreign exchange depreciation of real compared to the US dollar, with negative impact on the portion of costs and expenses expressed in other currencies (mainly US dollar and Canadian dollar).

(7)

	On December 31 of:		
in R$ billion	2013	2014	2015
Gross debt	68,977	76,517	112,666
Cash position*	12,465	10,555	14,022
Financial investments	0,008	0,392	0,109
Net debt	56,504	65,570	98,535

Table of Contents

d. Source of financing for working capital and investments in non-current assets

The sources of funds utilized by Vale in the last three years were generation of operating cash, loans and financing, and issue of bonds and securities, convertible or not, launched in the capitals market and sale of investments.

Operating activities from continuing operations generated cash flows of R$ 15,719 billion in 2015, compared to R$ 27.792 billion in 2014 and R$ 31.876 billion in 2013. Comparing 2013 and 2014, the operating cash flow suffered a reduction in 2012 determined mainly by price drops in our products. In 2013, operating cash flow suffered variation mainly due to the gold stream operation outsourced in February 2013 with Silver Wheaton Corp. (SLW) to sell 70% of the payable gold flows produced as a byproduct in the nickel mines in Sudbury Coleman, Cooper Cliff, Creighton, Garson, Stobie, Totten and Victor for a 20-year term, and with Silver Wheaton (Caymans) Ltd. to sell 25% of the payable gold flows produced as a by-product in the copper mine in Salobo for the longevity of the mine. In 2015, the operating cash flow suffered variation compared to the previous fiscal year mainly due to the drop of the price of ore and pellets

Among other more relevant operations in the three-year period, the following are highlighted:

- In November 2015, Vale issued R$ 1.5 billion in credit notes to export with due date in 2022 before Banco do Brasil.

- In August 2015, Vale issued infrastructure debentures to be placed by means of a public offer, in the total amount of R$ 1,350 billion. Infrastructure debentures are to be monetarily adjusted and will pay annual interest, priced at IPCA + 6.6232% a year and IPCA + 6.6252% a year, depending on the series.

- In May 2015, Vale acquired a new revolving credit facility in the amount of US$ 3.0 billion (equivalent to R$ 9.5 billion), for five years. This revolving credit facility replaces the revolving credit facility of the same amount acquired in 2011, being acquired from a syndicate comprised by 24 global banks.

- In March 2015, Vale signed a bank credit note with Bradesco for R$ 700 million. This agreement has been used as grounds for the CRI, to fund projects under the S11D Logística, in Complexo Portuário de Ponta Madeira. The agreement term is for seven years, and funds have been fully disbursed by June 30, 2015.

- From March to July 2015, Vale has acquired and disbursed exporting pre-payments with due dates in five or six years, linked to future sales, summing US$ 1.20 billion (equivalent to R$ 54.7 billion).

297

Table of Contents

- In December 2014, Vale acquired exporting prepayment with the Bank of China, due in six years, in the amount of US$ 300 million (equivalent to R$ 797 million), which has been fully disbursed. The total term of this operation is 6 years and by December 31, 2014 there was no disbursement related to this operation.

- In May 2014, Vale signed two new funding agreements with the BNDES in the total amount of R$ 6.2 billion. These agreements refer to the deployment of S11D and CLN S11D projects. The financing shall be in effect for ten years and funds will be disbursed in up to three years, according to the projects schedule. By December 31, 2015, R$ 3.3 billion were disbursed under these agreements.

- In January 2014, Vale issued infrastructure debentures in the amount of US$ 376.5 million (equivalent to R$ 913.5 million). Infrastructure debentures are to be adjusted and will pay annual interest, according to IPCA + 6.46% per year (equivalent to NTN-B 2020 0.15%), IPCA + 6.57% per year (equivalent to NTN-B 2022 0.10%), IPCA + 6.71% per year (equivalent to NTN-B 2024 + 0%) and IPCA + 6.78% per year (equivalent to NTN-B 2030 + 0%), and mature in 2021, 2024, 2026, and 2029, depending on the series.

- In January 2014, Vale acquired a financing in the amount of US$ 775 million with the Canadian agency EDC. The financing was divided into two tranches that are in effect for 5 and 7 years. The amount was fully disbursed by December 31, 2014.

- In December 2013, Vale issued R$ 650 million in export credit notes from Brazilian commercial banks with maturity in 2023.

- In October, November and December 2013, Vale acquired export pre-payments with maturity in five and seven years, linked to future sales, totaling US$ 1.4 billion (equivalent to R$ 3.2 billion), which have been fully disbursed at the time.

- In July 2013, Vale signed a financing contract with Banco Safra, a BNDES financing agent, in the amount of R$ 109.3 million. This contract is for the purchase of domestic equipment and was fully disbursed by December 31, 2014.

- In July 2013, Vale acquired a new revolving credit facility in the amount of US$ 2.0 billion (equivalent to R$ 4.7 billion), with a five-year maturity in a best effort transaction.

e. Potential sources of financing used for working capital and for investments in non-current assets for coverage of liquidity deficiency

In the regular course of business, the principal need for funds of Vale refers to capital investments, payments of dividends and debt service. The sources of funds frequently used are operating cash flow and financing.

Table of Contents

The main sources of financing to cover liquidity deficiency are the facilities related to the export transactions offered by local banks (Advance on Foreign Exchange Contract ACCs, and Advance on Delivered Exchange Instruments - ACEs).

Vale has, moreover, revolving lines of credit available that may be used at the option of the debtor. In 2013, Vale obtained a revolving credit facility in the amount of US$ 2.0 billion (equivalent to R$ 4.7 billion), for five years, while in fiscal year ending on December 31, 2014, Vale has not acquired revolving credit facilities.

In May 2015, the Company acquired another revolving line of credit in the amount of US$ 3.0 billion (equivalent to R$ 9.5 billion), with maturity period of 5 years, totaling, in lines of this type, available on December 31, 2015, US 5 billion, that may be used by Vale, Vale Canada Ltd. (Vale Canada), and Vale International S.A. (Vale International).

In January 2016, Vale has disbursed US$ 3 billion in revolving credit facilities, for purposes of increasing liquidity and covering potential cash flow needs until conclusion of the divestment program.

f. Indebtedness levels and composition of such debts

On December 31, 2015, the total debt was R$ 112.666 billion, with a tranche of R$ 1.937 billion guaranteed by Vale s assets, with an average maturity period amortization of 8.13 years and an average cost of 4.47% per year in US dollars.

DEBT STRUCTURE	ON DECEMBER 31 of:		
In R$ billion	**2013**	**2014**	**2015**
Gross debt	68,977	76,517	112,667
Tranche guaranteed by assets of Vale	5%	5%	1.7%
Average term of amortization (in years)	9.89	9.10	8.13
Average cost (in US dollars)	4.6%	4.6%	4.5%

Since July 2005, Vale has been considered investment grade by some of the main rating agencies. On the date of this Reference Form, Vale currently has the following credit risk ratings: BBB- (Standard & Poor s), Ba3 (Moody s), BBB- (Dominion Bond Ratings) and BBB (Fitch).

i. Relevant loan and financing contracts

The most important categories of the total debt of the Company are presented below. The values presented exclude the accumulated costs.

299

Table of Contents

- *Loans and financing contracted in US dollars (R$ 27.5 billion, R$ 18.7 billion, and R$ 15.5 billion on December 31, 2015, 2014, and 2013, respectively).* These loans include credit facilities for exports, financing imports from the export credit agencies and loans from commercial banks and multilateral organizations.

- *Fixed income instruments issued in US dollars (R$ 55.1 billion, R$ 35.3 billion, and R$ 32.4 billion on December 31, 2015, 2014, and 2013, respectively).* Vale issued several debt securities in the capital market, inclusive through its wholly owned subsidiary Vale Overseas in the total amount of US$ 13 billion (equivalent to R$ 50.8 billion). The subsidiary Vale Canada issued debt securities in the amount of US$ 400 million (equivalent to R$ 1.6 billion).

- *Fixed income instruments issued in euros (R$ 4.8 billion, R$ 4.8 billion and R$ 4.0 billion on December 31, 2014, 2013, and 2012, respectively).* Vale issued debt securities in the capital market in the total amount of 1.5 Billion (equivalent to R$ 4.8 billion).

- *Other debts (R$ 21.2 billion, R$ 16.5 billion, and R$ 15.2 billion on December 31, 2015, 2014, and 2013, respectively).* The Company has several loans acquired in Brazil, mainly with the BNDES and some private Brazilian banks, as well as loans and financing in other currencies.

For information on most relevant financing operations in last three fiscal years, see item 10.1(d) above.

ii. Other long-term relationships with financial institutions

Vale and its associated and subsidiary companies have a commercial relationship in the normal course of their business with some of the main financial institutions in the country, according to regular financial market practices.

iii. Degree of subordination among debts

There is no degree of contractual subordination among the Company s unsecured financial debts. Financial debts that are secured through collateral have the privileges and prerogatives granted by the law.

Additionally, considering the total of current and non-current liabilities of the Company, the R$ 206,128 billion or 99.1%, corresponded to unsecured debts on December 31, 2015 (compared to R$ 156,329 million or 97.8% on December 31, 2014; and R$ 136.350 billion or 97.6% on December 31, 2013). Such amounts are subject to the preference of Company obligations that appear as collateral, including mortgage of assets totaling, on December 31, 2015, R$ 1,937 billion or 1.7% of the total current and non-current liabilities of the Company, compared to R$ 3.485 or 2.2 % on December 31, 2014; and R$ 3.410 billion or 2.4% on December 31, 2013.

iv. Any restrictions that might be imposed on the issuer in particular, in relation to limits of indebtedness and contracting the company s debts, the distribution of dividends, the disposal of assets, the issue of new securities and the transfer of corporate control, and if the issuer has been compliant with these restrictions

Table of Contents

Some long-term financial instruments contain obligations related compliance with financial indicators. The main indicators are: (i) leveraging (which is the index found with the division of debt by Earnings Before Interest Tax, Depreciation and Amortization (EBITDA), and (ii) interest coverage (which is the index found by dividing EBITDA with interest expenses). Vale is in conformity with the levels required for the indicators.

Preventively, Vale has executed agreements in the last quarter to increase the upper limit of the financial covenant of the gross debt for adjusted EBITDA from 4.5x to 5.5x by the end of 2016. This type of measure ensures greater flexibility during the period when Vale closes its investment cycle. In addition, no clause is directly limiting the ability to distribute dividends or interest on equity.

g. Limits of financing contracted and percentage of use

The following is a description of limits set forth by the relevant infrastructure debentures and financing contracts in the last three fiscal years:

Date	Counterparty	Allocation		Value	Percentage Used	Disbursement of funds
8/15/2015	N/A	Use or reimbursement with expenses and/or debts related to the project for Expansion of Carajás Railway	R$	1.35 billion	100%	All infrastructure debentures issued by the Company have been fully subscribed and paid up.
3/24/2015	Banco Bradesco S.A.	Funding of CLN S11D project	R$	700 million	100%	Funds were disbursed entirely.
5/19/2014	BNDES	Funding of S11D and CLN S11D projects	R$	6.2 billion	54%	The credit is available in tranches, according to the projects schedule
01/15/2014	N/A	Used in the reimbursement of spending, expenses and/or debt related to the Southeastern Railroad	R$	1.0 billion	100%	The entire infrastructure debentures issued by the Company have already been subscribed and paid

Table of Contents

		Branch of the Pará Project (RFSP)				
12/27/2013	BNDES	Financing for the Tecnored Investment Plan	R$	136.7 million	100%	Credit is provided in tranches according to the project schedule
06/15/2013	Banco J. Safra	Financing for equipment	R$	109.31 million	100%	Credit is provided in tranches according to the project schedule
10/19/2012	BNDES	Financing for Vale Fertilizantes Project	R$	88.63 million	100%	Credit is provided in tranches according to the project schedule
09/24/2012	BNDES	Financing for CLN150 Project	R$	3.88 million	94%	Credit is provided in tranches according to the project schedule
8/04/2011	Banco Bilbao Viscaya, Banco Santander, BNP Paribas, Citibank Europe, Credit Agricole, HSBC, Natixis, and Societé Generale	Financing for the acquisition of ships with the Korean shipbuilders Daewoo and Sungdong	R$	2,062 billion	82%	The credit was provided in tranches according to the ship delivery schedule, and the remaining unused balanced was cancelled
4/01/2008	BNDES	investments made in Brazil	R$	7.3 billion	76%	The credit is provided in tranches according to the project schedule

Table of Contents

h. Significant alterations in each item of the financial statements

Fiscal year ending on December 31, 2014 compared to fiscal year ending on December 31, 2015

Analysis of Operating Results 2014 x 2015

The table below presents the values for the consolidated income statements for the fiscal years ended December 31, 2015 and 2014:

	Fiscal Year ending on December 31,				
(in R$ billion)					**Variation (%)**
Income statement	**2014**	**AV (%)**	**2015**	**AV (%)**	**(2014 x 2015)**
Net Operating Revenues	88,275	100.0	85,499	100.0	(3.1)
Cost of products and services	(59,087)	(66.9)	(68,658)	(80.3)	16.2
Administrative and sales expenses	(2,603)	(2.9)	(2,143)	(2.5)	(17.7)
Research and development	(1,738)	(2.0)	(1,603)	(1.9)	(7.8)
Pre-operational and shutdown operation	(2,563)	(2.9)	(3,408)	(4.0)	33.0
Other net operating expenses	(2,560)	(2.9)	(0,586)	(0.7)	(77.1)
Impairment of noncurrent assets	(2,713)	(3.1)	(34,553)	(40.4)	1,173.6
Gain (loss) in the measurement or noncurrent assets sale	(0,441)	(0.5)	0,052	0.1	NA
Operating Revenues	16,570	18.8	(25,400)	(29.7)	NA
Equity results	1,141	1.3	(1,507)	(1.8)	NA
Result of disposal of shares in joint ventures and associated companies	(0,068)	(0.1)	0,296	0.3	NA
Net financial result	(14,753)	(16.7)	(36,538)	(42.7)	147.7
Impairment of investments	(0,071)	n/a	(1,727)	(2.0)	2,332.4
Income before income tax and social contribution	2,819	3.2	(64,876)	(75.9)	NA
Taxation on profits	(2,600)	(2.9)	18,879	22.1	NA

Table of Contents

(in R$ billion)	Fiscal Year ending on December 31,				Variation (%)
Income statement	**2014**	**AV (%)**	**2015**	**AV (%)**	**(2014 x 2015)**
Net income (loss) in the year	0,219	0.2	(45,997)	(53.8)	NA

Table of Contents

Revenues

The net operating revenue reached R$ 85,499 billion in 2015, compared to R$ 88,275 billion in 2014, corresponding to a 3.1% decrease. The revenue decrease was mainly due to the drop in commodities prices, partially offset by the depreciation of real, because company income is mainly expressed in dollars.

Iron ore

The revenue from the sales of ore decreased by 8.6%, from R$ 45,341 billion in 2014 to R$ 41,427 billion in 2015, especially due to the drop in ore price in the international market, led by drop in consumption in China, partially offset by the increase in the volume of sales of iron ore, due to improvement in distribution channel.

Pellets

The revenue from the sale of pellets decreased by 4.0%, from R$ 12,397 billion in 2014 to R$ 11,916 billion in 2015, due to the drop in pellets price in the international market, partially offset by the depreciation or real, as company revenue is mainly expressed in dollars.

Manganese ore and ferroalloys

The revenue from the sale of manganese and ferroalloys decreased by 44.5%, from R$ 0,933 billion in 2014 to R$ 0,518 billion in 2015, due to the drop in prices.

Coal

The revenue from the sale of coal was maintained in line, from R$ 1,740 billion in 2014 to R$ 1,739 billion in 2015, despite the drop of prices in the international market, considering the depreciation of real.

Base Metals

Nickel and other products

Table of Contents

There was a 5.7% increase in the revenue from these products, from R$ 14,703 billion in 2014 to R$ 15,534 billion in 2015, especially due to the increase in the volume of sales of nickel, resulting from annual production records, in the operations of New Caledonia, Indonesia and Onça Puma.

Copper

The revenue from the sale of copper increased by 44.4%, from R$ 3,434 billion in 2014 to R$ 4,957 billion in 2015, due to the ramp-up in Salobo.

Fertilizers

Potash

The revenue from the sale of potash increased by 22.0%, from R$ 363 million in 2014 to R$ 443 million in 2015, due to variation in the US dollar.

Phosphate

The revenue from the sale of phosphate increased by 36.3%, from R$ 4,259 billion in 2014 to R$ 5,806 billion in 2015, due to variation in the US dollar.

Nitrogen

The revenue from the sale of nitrogen increased by 21.8%, from R$ 820 million in 2014 to R$ 999 million in 2015, due to variation in the US dollar.

Table of Contents

Other products and services

The revenue from other products and services decreased by 82.3%, from R$ 2,347 billion in 2014 to R$ 414 million in 2015, due to the drop in the sale of power to third parties.

Costs of Business Areas

Comments on the Cost of Business Areas

The cost of product sold (excluding depreciation) was R$ 56,855 billion in 2015, a R$ 6,852 billion increase (13.7%) compared to R$ 50,003 billion in 2014, especially due to the impact of exchange variation (R$ 8,372 billion) on costs expressed in dollars, for instance, costs with maritime freight of iron ore and costs of base metals outside Brazil.

Costs related to each business area are detailed below:

CPV BY BUSINESS AREA

In R$ million	2014	2015
Ferrous Minerals	30,840	34,211
Base metals	10,835	14,427
Coal	2,514	2,857
Fertilizers	4,406	4,896
Others	1,408	464
Cost with no depreciation	50,003	56,855

It is important to note that all amounts mentioned were considered after discounting depreciation.

Sales and administrative expenses

Sales and administrative expenses decreased by 17.7%, from R$ 2,603 billion in 2014 to R$ 2,143 billion in 2015, especially due to the continuous streamlining of our corporate structure.

307

Table of Contents

Research and development expenses

Research and development expenses remained stable, from R$ 1,738 billion in 2014 to R$ 1,603 billion in 2015.

Pre-operational and operation stoppage expenses

In 2015, pre-operational and operation stoppage expenses were R$ 3,408 billion, representing a R$ 845 million increase compared to 2014, especially due to higher expenses with Long Harbour and Nacala projects.

Other operational expense/income, net

Other operational expenses decreased by 77.1%, from R$ 2,560 billion in 2014 to R$ 0,586 billion in 2015, especially due to nonrecurring positive effect from the R$ 722 million transaction of gold stream registered in the first quarter in 2015 and R$ 1,281 billion, registered in the fourth quarter of 2015, related to the annual revision of mine closure provisions and other assets, generating a positive impact, resulting from the increase in the use life of some mines and revision of the work scope required for closure of the assets.

Noncurrent asset impairment

In 2015, asset impairment totaled R$ 34,553 billion mainly due to the significant reduction in price assumptions used in impairment tests (see table below). The reduction registered in 2014, in the amount of R$ 2.713 billion refers mainly to Vale Fertilizantes and Vale BSGR Limited, in the amount of R$ 5,593 billion, and reversion of part of the impairment of Onça Puma in the amount of R$ 4,295 billion, which initial value was recorded in 2012.

Impairment R$ million	Total impairment of assets in 2015	Impairment in agreements 2015	Recoverable value Dec 31, 2015
Ferrous minerals			
Iron ore Central-Western System (1)	2,023	1,382	
Pelleting plants	213		
Others	225		
Coal			
Assets in Mozambique	9,302		6,751
Assets in Australia(1)	2,460		286
Base metals			

Vale New Caledonia (VNC)	5,660		14,545
Vale New Foundland and Labrador (VNL)	13,394		9,188
Onça Puma	(976)		9,102
Others	240		
Fertilizers			
Phosphate assets	(1,515)		15,002
Rio Colorado Project (PRC)	2,123		78
Others	22		
Total	**33,171**	**1,382**	

Table of Contents

Impairment in investments on affiliates and joint ventures

R$ million	Total impairment in 2015
Iron ore	
Samarco	510
Base metals	
Teal Minerals	1,217
Total	**1,727**

On November 5, 2015, Samarco Mineração S.A. (Samarco) experienced the failure of iron ore tailings dam (Fundão) in state of Minas Gerais - Brazil. Following the dam failure, the competent authorities ordered the suspension of Samarco operations.

a) Accounting impacts on the investment resulting from the dam failure

Samarco is a closed capital company, in which each shareholder, Vale and BHP Billiton Brasil Ltda. (BHP), has a 50% ownership interest.

As a consequence of the dam failure, Samarco has incurred in expenses, wrote off assets, and recognized provisions for remediation, which affected its balance sheet and income statement.

Table of Contents

Because Samarco is a *joint venture*, the effects of the dam failure are accounted for under equity method by Vale, in which the balance sheet and income statement impact is limited to

Table of Contents

the Vale s interest in Samarco s capital as per the Brazilian Corporate Law. The dam failure had no effects on Vale s cash flow for the year ended on December 31, 2015.

The accounting impact of the investment in Samarco in Vale s financial statements, including effects of the dam failure, are as follows:

	Consolidated			
In Million	**Investments in associated and joint ventures**	**Accounts receivable**	**Related parties**	**Total**
Balance on December 31, 2014	**533**	**63**	**822**	**1.418**
Equity results on income statement				(533)
Dividends received			(459)	(459)
Royalties declared		-120		120
Royalties received		(36)		(36)
Transfers	510	(147)	(363)	
Impairment of assets	(510)			(510)
Balance on December 31, 2015				

Due to the preliminary stage of the legal proceedings related to the dam failure involving Samarco and its shareholders, it is not possible to provide a range of possible outcomes or a reliable estimate of the potential future exposure for Vale related to the lawsuits. Therefore, no provision was recognized in the financial statements of Vale and no contingent liability was quantified.

On March 2, 2016, Samarco and its shareholders, Vale and BHP have entered into an agreement with the States of Espírito Santo and Minas Gerais and certain other public authorities for the restoration of the environment and communities affected by the Samarco s dam failure. The agreement provides a long-term remedial and compensation framework for responding to the impact of the event (Agreement).

Under the terms in the Agreement, Samarco, Vale and BHP will establish a Foundation that will develop and execute environmental and social-economic programs to remediate and provide compensation for damages caused by the Samarco s dam failure.

The term of the Agreement is 15 years, renewable for periods of one year successively until all obligations under the Agreement have been performed.

Table of Contents

Samarco will fund the Foundation with contributions as follows (calendar year):

- R$ 2 billion in 2016, less the amount of funds already spent on or allocated to, remediation and compensation activities;
- R$ 1.2 billion in 2017; and
- R$ 1.2 billion in 2018.

Samarco has agreed upon approved annual contributions required for the remediation and compensation projects for each year, while for the period from 2019 to 2021, these contributions will range from R$ 800 million to R$ 1.6 billion.

From signature of the agreement, the Foundation will allocate an annual amount of R$ 240 million, for a period of 15 years, to the execution of compensation projects. These annual amounts are already included in the contribution for the first six years. There is also a one-time contribution of R$ 500 million for basic sanitation in the affected areas.

Table of Contents

Samarco management is working on a plan that would permit it to resume operations. However, the feasibility, timing and scope of restarting remain uncertain. Samarco expects that it will be able to resume operations and to generate all or a substantial part of the funding required under the agreement.

Samarco will continue to conduct and fund the humanitarian and environmental recovery and remediation work until the Foundation is operational, which is likely to be in the next few months.

To the extent Samarco does not meet its funding obligations in the Foundation, each of Vale and BHP is liable, under the terms of the Agreement, for providing funds to the Foundation in proportion to its 50 per cent shareholding in Samarco. The Samarco´s cash flow projections included in its business plan consider that, from resumption of its operations, Samarco will be able to satisfy its obligations without the capital contributions or cash disbursements by its shareholders. Presuming that Samarco will resume its operations, Vale does not believe that the Agreement will have material impact on its financial statements in the long run. However, Vale may be required to make investments, this year, under the terms in the Agreement, until resumption of Samarco s activities.

At this time, due to remaining uncertainties, it is impossible to reasonably estimate or measure the amounts that Vale may be required to invest, or how this should be done. Any evidence on the need of future cash disbursement by shareholders under the Agreement will be immediately reflected in Vale s financial statements, in proportion to its percentage of interest at Samarco, as a provision of remediation and compensation related to the dam failure.

Result in the measurement or sale of noncurrent assets

The result of the sale of assets increased from an expense of R$ 441 million in 2014 to income of R$ 52 million in 2015. In 2015, the result of the measurement or sale of noncurrent assets referred to the navigation and power assets, in 2014 the result referred to the assignment of the area of Vale Canada Limited under the CoW agreement of Vale Canada Limited.

Result from equity

The result from equity decreased R$ 2,648 billion, from income of R$ 1,141 billion in 2014 to expense of R$ 1,507 billion in 2015, especially due to Teal Minerals (copper operation in Lubambe, Africa), which had the negative impact of the impairment of assets and Samarco results.

Table of Contents

Net Financial Results

Net income decreased by 147.7%, from R$ 14,753 billion expense in 2014 to R$ 36,538 billion expense in 2015, basically due to exchange variation.

Taxation on profits

In 2015, the net income tax income was R$ 18,879 billion, compared to R$ 2,600 billion expense in 2014, basically due to fiscal losses calculated in companies abroad and foreign exchange results.

Net gains/loss in the fiscal year

Net profit from R$ 219 million in 2014 to net loss of R$ 45,997 billion in 2015, mainly due to factors explained above.

Table of Contents

Analysis of equity variation on December 31, 2015 compared to December 31, 2014

	12.31.2014	AV (%)(3)	12.31.2015	AV (%)(4)(7)	Variation (%) (2014 x 2015)
Current Assets					
Cash and cash equivalents	10,555	3.4	14,022	4.0	32.8
Short-term investments	0,392		0,109		(72.2)
Derivatives financial instruments	0,441	0.1	0,474	0.1	7.5
Accounts Receivable	8,700	2.8	5,763	1.7	(33.8)
Inventory	11,956	3.9	13,775	4.0	15.2
Taxes on estimated profit	4,200	1.4	3,513	1.0	(16.4)
Taxes to be refunded	4,515	1.5	5,482	1.6	21.4
Related parties	1,537	0.5	0,273	0.1	(82.2)
Others	1,780	0.6	1,215	0.3	(31.7)
Non-current assets held for sale	9,669	3.1	15,792	4.6	63.3
	53,745	17.4	60,418	17.5	12.4
Noncurrent					
Derivative financial instruments	0,231	0.1	0,363	0.1	57.1
Loans	0,609	0.2	0,732	0.2	20.2
Taxes on profits	1,271	0.4	1,840	0.5	44.8
Taxes to be refunded	1,064	0.3	1,956	0.6	83.8
Taxes on profit deferred	10,560	3.4	30,867	8.9	192.3
Judicial deposits	3,370	1.1	3,445	1.0	2.2

(3) Relative to asset total.

(4) Relative to asset total.

Table of Contents

	12.31.2014	AV (%)(3)	12.31.2015	AV (%)(4)(7)	Variation (%) (2014 x 2015)
Related parties	0,093		0,005		(94.6)
Others	1,873	0.6	2,392	0.7	27.7
	19,071	6.1	41,600	12.0	118.1
Investments	10,978	3.6	11,481	3.3	4.6
Intangible Assets	18,114	5.9	20,789	6.0	14.8
Fixed Assets	207,507	67.0	211,259	61.2	1.8
	255,670	82.6	285,129	82.5	11.5
Total assets	309,415	100.0	345,547	100.0	11.7

Liabilities and shareholders equity	**12.31.2014**	**AV (%)(1)**	**12.31.2015**	**AV (%)(1)**	**(2014 x 2015)**
Current					
Accounts Payable to suppliers and contractors	11,566	3.8	13,140	3.8	13.6
Salaries and employment taxes	3,089	1.0	1,464	0.4	(52.6)
Derivatives financial instruments	3,760	1.2	8,107	2.3	115.6
Loans and financing	3,768	1.2	9,788	2.8	159.8
Related Parties	0,813	0.3	1,856	0.5	128.3
Taxes on profit Refinancing Program	1,213	0.4	1,348	0.4	11.1
Taxes on royalties payable	1,461	0.5	0,977	0.3	(33.1)
Taxes on profit payable	0,937	0.3	0,943	0.3	0.6
Pension and retirement benefits	0,177		0,266	0.1	50.3
Asset retirement obligation	0,361	0.1	0,346	0.1	(4.2)
Others	1,074	0.3	2,531	0.8	135.7
	28,219	9.1	40,766	11.8	44.5

Table of Contents

	12.31.2014	AV (%)(3)	12.31.2015	AV (%)(4)(7)	Variation (%) (2014 x 2015)
Liabilities related to non-current assets held for sale	0,294	0.1	0,416	0.1	41.5
	28,513	9.2	41,182	11.9	44.4
Non-current					
Derivatives financial instruments	4,276	1.4	5,581	1.6	30.5
Loans and financing	72,749	23.5	102,878	29.8	41.4
Related Parties	0,288	0.1	0,830	0.2	188.2
Pension and retirement benefits	5,941	1.9	6,831	2.0	15.0
Legal provisions	3,405	1.1	3,210	0.9	(5.7)
Taxes on profit Refinancing Program	15,572	5.0	15,953	4.6	2.4
Taxes on profits deferred	8,874	2.9	6,520	1.9	(26.5)
Asset retirement obligation	8,588	2.8	9,313	2.7	8.4
Participation Debentures	4,584	1.5	1,336	0.4	(70.9)
Non-controlling shareholders redeemable share	0,645	0.2			(100.0)
Others	6,379	2.1	12,494	3.6	106.7
	131,301	42.4	164,946	47.7	25.6
Shareholders Equity					
Shareholders equity of Vale shareholders	146,414	47.3	131,160	38.0	(10.4)
Shareholders equity of non-controlling shareholders	3,187	1.0	8,259	2.4	159.1
Total shareholders equity	149,601	48.3	139,419	40.4	(6.8)
Total liabilities and shareholders equity	309,415	100.0	345,547	100.0	11.7

(1) Relative to total liabilities

Table of Contents

Position on December 31, 2013 compared to the position on December 31, 2014

Vale has assets and debts referenced to different currencies, the main ones being the *real*, the US dollar and the Canadian dollar. On December 31, 2015, the Company had 54% of assets related to Brazilian *reais,* 11% to US dollars, 17% to Canadian dollars and 8% to other currencies, while the majority of our debt was expressed in US dollars. Consequently, the effects of changes in exchange rates had an impact on the financial statements, especially the depreciation of the *real* by 47% against the US dollar between December 31, 2014 and 2015.

Current Assets

Cash and cash equivalents

The 32.8% increase, from R$ 10,555 billion on December 31, 2014 to R$ 14,022 billion on December 31, 2015, occurred as a function of divestment transactions: (i) R$ 4.8 billion from the sale of twelve VLOCs (*very large ore carriers*) for Chinese shipyards; (ii) R$ 4 billion from the sale of 36.4% of preferred shares of MBR; (iii) R$ 2.8 billion from the *gold stream* transaction as byproduct of the Salobo copper mine; and (iv) R$ 306 million, from the sale of power assets. Part of the amounts above were used for Company general purposes.

Inventories

The 15.2% increase, from R$ 11,956 billion on December 31, 2014 to R$ 13,775 billion on December 31, 2015, was mainly due to exchange variation, considering that some inventory is evaluated in US dollars.

Taxes on estimated profit

Taxes on estimated profit decreased by 16.4%, from R$ 4,200 billion on December 31, 2014 to R$ 3,513 billion on December 31, 2015, due to offset values in the period.

Table of Contents

Non-current assets held for sale and discontinued operations

The sale of assets totaled R$ 15,792 billion on December 31, 2015, related to Nacala, comparing to R$ 9,669 billion on December 31, 2014 related to the sale of power generation assets and general load.

Noncurrent assets

Deferred taxes on profit

The amount of deferred taxes on profits increased by 192.3%, from R$ 10,560 billion on December 31, 2014 to R$ 30,867 billion on December 31, 2015, basically due to fiscal loss of the controller and its affiliate abroad and previous years related to the inventory in losses due to Law 12,973.

Investments

Investments increased by 4.6%, from R$ 10.978 billion on December 31, 2014 to R$ 11.481 billion on December 31, 2015, reflecting the investment made on Aliança Geração de Energia S.A.

Table of Contents

Fixed Assets

Fixed assets increased by 1.8%, from R$ 207,507 billion on December 31, 2014 to R$ 211,259 billion on December 31, 2015, due to exchange variation of some assets abroad, partially offset by depreciation expenses and asset offsetting, mainly Nacala.

Current Liabilities

Derivatives

Derivatives increased by 115.6%, from R$ 3,760 billion on December 31, 2014 to R$ 8,107 billion on December 31, 2015, basically due to (i) maturity of fuel operations, with the effect of the drop of price in the fuel market and appreciation of US dollar compared to real, affecting fuel operations and exchange swaps.

Loans and financing

The increase in long-term loans by 159.8%, from R$ 3,768 billion on December 31, 2014 to R$ 9,788 billion on December 31, 2015, was basically due to exchange variation and especially reclassification of part of the long-term debt to mature in 2016.

Liabilities related to non-current assets held for sale and discontinued operations

Liabilities related to non-current assets held for sale increased by 41.5%, from R$ 0,294 billion on December 31, 2014 to R$ 0,416 billion on December 31, 2015, due to the availability of Nacala for sale.

Noncurrent liabilities

Derivatives

Derivatives increased by 30.5%, from R$ 4,276 billion on December 31, 2014 to R$ 5,581 billion on December 31,2015, basically due to appreciation of US dollar against real, with a loss in swap

Table of Contents

mark-to-market, which goal is to reduce the volatility of cash flow, net of transfer of fuel positions to current liabilities.

Loans and financing

Loans and financing increased by 41.4%, from R$ 72,749 billion on December 31, 2014 to R$ 102,878 billion on December 31,2015, reflecting exchange variation, as considerable portion of loans were acquired in foreign currency.

Provisions for contingencies

Provisions for contingencies decreased by 5.7%, from R$ 3,405 billion on December 31, 2014 to R$ 3,210 billion on December 31,2015, reflecting the changes to the prognosis of part of the lawsuits where Vale appears as party.

Obligations for asset retirement

Obligations for asset retirement increased by 8.4%, from R$ 8,588 billion on December 31, 2014 to R$ 9,313 billion on December 31,2015, mainly due to exchange reduction applicable to part of the balance of companies abroad, partially offset by the adjustment of the present value

Table of Contents

of the obligation due to reduction in the discount rate.

Debentures

Debentures decreased by 70.9%, from R$ 4,584 billion on December 31, 2014 to R$ 1,336 billion on December 31, 2015, due to decrease in the mark-to-market due to commodities prices.

Shareholders Equity held by Controlling Shareholders

Shareholders equity held by controlling shareholders decreased by 11.2%, from R$ 146,414 billion on December 31, 2014 to R$ 129,958 billion on December 31, 2015, due to losses in the period.

Fiscal year ended on December 31, 2013 compared to fiscal year ended on December 31, 2014

Analysis of Operating Results, 2014 vs. 2013

The table below presents the values for the consolidated income statements for the fiscal years ended December 31, 2013 and December 31, 2014:

	Fiscal year ended on December 31,				
(in R$ billion)					**Variation (%)**
Income statement	**2013**	**AV (%)(1)**	**2014**	**AV (%)(1)**	**(2013 x 2014)**
Net Operating Revenues	101,490	100.0	88,275	100.0	(13.0)
Cost of products and services	(52,511)	(51.7)	(59,087)	(66.9)	12.5
Administrative and sales expenses	(2,804)	(2.8)	(2,603)	(3.0)	(7.2)
Research and development	(1,745)	(1.7)	(1,738)	(2.0)	(0.4)
Pre-operational and shutdown operation	(4,035)	(4.0)	(2,563)	(2.9)	(36.5)
Other net operating expenses	(2,157)	(2.1)	(2,560)	(2.9)	18.7
Reduction of noncurrent assets recoverable value	(5,390)	(5.3)	(2,713)	(3.1)	(49.7)

Table of Contents

	Fiscal year ended on December 31,				
(in R$ billion)					**Variation (%) (2013 x**
Income statement	**2013**	**AV (%)(1)**	**2014**	**AV (%)(1)**	**2014)**
Gain (loss) in the measurement or noncurrent assets sale	(0,508)	(0.5)	(0,441)	(0.5)	(13.2)
Operating Revenues	32,340	31.9	16,570	18.7	(48.8)
Result of corporate participations	0,999	1.0	1,141	1.3	14.2
Result of disposal of shares in joint ventures and associated companies	0,098	0.1	(0,068)	(0.1)	(169.4)
Net financial result	(18,442)	(18.2)	(14,753)	(16.7)	(20.0)
Reduction of investments recoverable value		n/a	(0,071)	(0.1	n/a
Income before income tax and social contribution	14,995	14.8	2,819	3.2	(81.2)
Taxation on profits	(15,249)	(15.0)	(2,600)	(2.9)	(82.9)
Losses from discontinued operations	(0.004)			n/a	n/a
Net income (loss) in the year	(0.258)	(0.2)	0.219	0.2	(184.9)

(1) Relative to the net operating revenue.

Revenues

The net operating revenue reached R$ 88.275 billion in 2014, compared to R$ 101.490 billion in 2013, corresponding to a 13% decrease. The revenue decrease was mainly due to the drop in commodities prices, partially offset by the increase in the volume of iron ore sales resulting from the *ramp-up* of ore projects.

Table of Contents

Iron Ore

The revenue from the sales of ore decreased by 26.0%, from R$ 61.271 billion in 2013 to R$ 45.341 billion in 2014, especially due to the drop in ore price. This drop was mainly offset by the increase in sales volume, with the ramp up of some ore projects.

Pellets

The revenue from the sale of pellets decreased by 4.4%, from R$ 12.972 billion in 2013 to R$ 12.397 billion in 2014, due to the drop in the price reference index of ore IODEX partially offset by the increase in the quality premium attributed to pellets.

Manganese ore and ferroalloys

The revenue from the sale of manganese and ferroalloys decreased by 18.2%, from R$ 1.140 billion in 2013 to R$ 0.933 billion in 2014, due to the drop in volume and prices.

Coal

The revenue from the sale of coal decreased by 20.5%, from R$ 2.188 billion in 2013 to R$ 1.740 billion in 2014, due to the drop in prices and suspension of operations of Integra and Isaac Plains, partially offset by the increased volume in Moatize. Suspension of operations of Integra and Isaac Plains was due to the economic unviability of the current market conditions.

Base Metals

Nickel and other products

There was a 17.0% increase in the revenue from these products, from R$ 12.566 billion in 2013 to R$ 14.703 billion in 2014, especially due to the increase in nickel price, responding to the demand cycle, and the increase volume of sales of

nickel, due to the return of production at Onça Puma, after recovery of the furnace.

Table of Contents

Copper

The revenue from the sale of copper increased by 8.0%, from R$ 3.180 billion in 2013 to R$ 3.434 billion in 2014, due to the increased sales volume driven by the *ramp-up* of Salobo II, copper operation in Brazil.

Table of Contents

Fertilizers

Potash

The revenue from the sale of potash decreased by 16.4%, from R$ 434 million in 2013 to R$ 363 million in 2014, due to the decrease in sales volume and prices due to the lower demand resulting from weak conditions in the global market of fertilizers.

Phosphate

The revenue from the sale of phosphate decreased by 4.1%, from R$ 4.443 billion in 2013 to R$ 4.259 billion in 2014, due to the decrease prices due to the lower demand resulting from weak conditions in the global market of fertilizers.

Nitrogen

The revenue from the sale of nitrogen decreased by 17.2%, from R$ 990 million in 2013 to R$ 820 million in 2014, partially due to the sale of the company Araucária in 2013.

Other products and services

The revenue from other products and services increased by 26.9%, from R$ 1.850 billion in 2013 to R$ 2.347 billion in 2014, due to the drop in the sale of steel.

Costs of Business Areas

Comments on the Cost of Business Areas

The cost of products and services sold (excluding depreciation) was R$ 50.003 billion in 2014, a R$ 5.523 billion increase compared to R$ 44.480 billion in 2013, especially due to exchange variation and greater volume sold. The cost of ferrous minerals increased by R$ 5.082 billion (19.7%) and the cost of base metals increased by R$ 747 million (7.4%), both increases especially due to the greater volume sold. Moreover, costs with coal and fertilizers increased by R$ 29 million and reduced by R$ 293 million, respectively.

Table of Contents

Costs related to each business area are detailed below:

CPV BY BUSINESS AREA

in R$ million	2013	2014
Ferrous	25,758	30,840
Base metals	10,088	10,835
Coal	2,485	2,514
Fertilizers	4,699	4,406
Others	1,450	1,408
Cost with no depreciation	44,480	50,003

It is important to note that all amounts mentioned were considered after discounting depreciation.

Sales and administrative expenses

Sales and administrative expenses decreased by 7.2%, from R$ 2.804 billion in 2013 to R$ 2.603 billion in 2014, especially due to the continuous simplification of our corporate structure.

Research and development expenses

Research and development expenses remained stable, from R$ 1.745 billion in 2013 to R$ 1.738 billion in 2014.

Noncurrent asset impairment

In 2014, asset impairment totaled R$ 2.713 billion mainly due to Vale Fertilizantes and Vale BSGR Limited, in the amount of R$ 5.593 billion, and the review of part of the impairment of Onça Puma, in the amount of R$ 4,295 billion, which initial value was registered in 2012. Impairment in 2013 registered in the amount of R$ 5.390 billion refers mainly to the suspension of the Rio

Table of Contents

Colorado Project (PRC) in the amount of R$ 4.963 billion and pelleting plants in the amount of R$ 427 million.

Pre-operational and operation stoppage expenses

In 2014, pre-operational and operation stoppage expenses were R$ 2.563 billion, representing a R$ 1.472 billion decrease compared to 2013, especially due to lower expenses with the Rio Colorado and Long Harbor Projects.

Other net operational expense/income

Other operational expenses increased by 18.7%, from R$ 2.157 billion in 2013 to R$ 2.560 billion in 2014. If excluding the transaction nonrecurring positive effect of the sale of 25% of payable gold flow produced as byproduct of the copper mine of Salobo during the mine life, and 70% of payable gold flow produced as byproduct of the nickel mines in Sudbury Coleman, Copper Cliff, Creighton, Garson, Stobie, Totten, and Victor paid in the first quarter in 2013, net operational expenses would decrease by 3.4% from 2013 to 2014.

Loss in the measurement or sale of noncurrent assets

The result of the sale of assets decreased by 13.2%, from R$ 508 million in 2013 to R$ 441 million in 2014. In 2013, the result referred to the loss in the sale of Tres Valles, while in 2014 the loss referred to the termination of the area of Vale Canada Limited. For more information, see explanatory note 30 in the Company financial statement.

Result from shareholding

The result from shareholding increased by 14.2%, from R$ 999 million in 2013 to R$ 1.141 billion in 2014, especially due to discontinued consolidation of VLI into Vale results.

Net Financial Results

Net income decreased by 20.0%, from R$ 18.442 billion expense in 2013 to R$ 14.753 billion expense in 2014, due to the impact of the Fiscal Recovery Program REFIS (REFIS), registered in 2013.

Table of Contents

Taxation on profits

In 2014, the net income tax expense was R$ 2.600 billion, compared to R$ 15.249 billion in 2013, basically due to company results abroad taxed at rates other than the ones applicable to the controlling company and the inability to reduce the impairment of certain assets.

Table of Contents

Net profit/loss of the fiscal year

Net loss in the amount of R$ 258 million in 2013 turned into net profit of R$ 219 million in 2014, especially due to factors mentioned above.

Analysis of equity changes on December 31, 2014 compared to December 31, 2013

in R$ billion	12.31.2013	AV (%)(1)	12.31.2014	AV (%)(1)	Variation (%) (2014 x 2013)
Current Assets					
Cash and cash equivalents	12,465	4.3	10,555	3.4	-15.3
Short-term investments	0,008	0.0	0,392	0.0	n/a
Derivatives financial instruments	0,471	0.2	0,441	0.1	-6.4
Accounts Receivable	13,360	4.6	8,7	2.8	-34.9
Related parties	0,611	0.2	1,537	0.5	151.6
Inventory	9,622	3.3	11,956	3.9	23.7
Taxes on estimated profit	5,563	1.9	4,2	1.4	-24.5
Taxes to be refunded	3,698	1.3	4,515	1.5	22.1
Advances to suppliers	0,292	0.1	0,256	0.1	-12.3
Others	2,151	0.7	1,524	0.6	-29.1
Non-current assets held for sale	8,822	3.0	9,669	3.1	9.6
	57,103	**19.6**	**53,745**	**17.4**	**-5.9**
Non-current					
Related Parties	0,235	0.1	0,093	0.0	-63.2
Loans and financing	0,564	0.2	0,609	0.2	8.0
Legal deposits	3,491	1.2	3,37	1.1	-3.5
Taxes on profits to be refunded	0,899	0.3	1,271	0.4	41.4
Taxes on profits deferred	10,596	3.6	10,56	3.4	-0.3
Taxes to be refunded	0,668	0.2	1,064	0.3	59.3
Derivatives financial instruments	0,329	0.1	0,231	0.1	-29.8
Others	1,730	0.6	1,693	0.6	-2.1
	18,977	**6.5**	**19,071**	**6.1**	**0.5**
Investments	8,397	2.9	10,978	3.6	30.7
Intangibles	16,096	5.5	18,114	5.9	12.5
Fixed Assets	191,308	65.5	207,507	67	8.5
	234,778	**80.4**	**255,67**	**82.6**	**8**
Total Assets	**291,881**	**100.0**	**309,415**	**100**	**6.0**

Table of Contents

Liabilities and shareholders equity	12.31.2013	AV (%) (1)	12.31.2014	AV (%) (1)	Variation (%) (2014 x 2013)
Current					
Accounts Payable to suppliers and contractors	8,837	3.0	11,566	3.8	30.9
Salaries and employment taxes	3,247	1.1	3,089	1.0	-4.9
Derivatives financial instruments	0,556	0.2	3,76	1.2	576.3
Loans and financing	4,158	1.4	3,768	1.2	-9.4
Related Parties	0,479	0.2	0,813	0.3	69.7
Taxes on profit Refinancing Program	1,102	0.4	1,213	0.4	10.1
Taxes to be refunded	0,766	0.3	1,461	0.5	90.7
Taxes on estimated profit	0,886	0.3	0,937	0.3	5.8
Pension and retirement benefits	0,227	0.1	0,177	0.0	-22.0
Asset retirement obligation	0,225	0.1	0,361	0.1	60.4
Other	0,985	0.3	1,074	0.3	9.0
	21,468	**7.4**	**28,219**	**9.1**	**31.4**
Liabilities related to non-current assets held for sale	1,050	0.4	0,294	0.0	(72.0)
	22,518	**7.8**	**28,513**	**9.2**	**26.6**
Non-current					
Derivatives financial instruments	3,496	22.2	4,276	1.4	22.3
Loans and financing	64,819	0.0	72,749	23.5	12.2
Related Parties	0,011	0.0	0,288	0.1	n/a
Pension and retirement benefits	5,148	1.8	5,941	1.9	15.4
Legal provisions	2,989	1.0	3,405	1.1	13.9
Taxes on profit Refinancing Program	15,243	5.2	15,572	5.0	2.2
Taxes on profits deferred	7,562	2.6	8,874	2.9	17.3
Asset retirement obligation	5,969	2.0	8,588	2.8	43.9
Participation Debentures	4,159	1.4	4,584	1.5	10.2
Non-controlling shareholders redeemable share	0,646	0.2	0,645	0.2	-0.2
Others	7,200	2.5	6,379	2.1	-11.4
	117,242	**40.1**	**131,301**	**42.4**	**12.0**
Shareholders Equity					
Vale s controlling shareholders equity	148.346	50.8	146.414	47.3	(1.3)
Non-controlling shareholders interest	3.775	1.3	3.187	1.0	(15.6)
Total equity	**152.121**	**52.117**	**149.601**	**48.3**	**(1.7)**
Total liabilities and equity	**291.881**	**100.000**	**309.415**	**100**	**6.0**

(1) Relative to total liabilities and shareholders equity.

Table of Contents

Position on December 31, 2013 compared to the position on December 31, 2014

Vale has assets and debts referenced to different currencies, the main ones being the *real*, the US dollar and the Canadian dollar. On December 31, 2014, the Company had 55% of assets related to Brazilian *reais,* 12% to US dollars, 19% to Canadian dollars and 14% to other currencies, while the majority of our debt was expressed in US dollars. Consequently, the effects of changes in exchange rates had an impact on the financial statements, especially the

Table of Contents

depreciation of the *real* by 13 % against the US dollar between December 31, 2013 and 2014.

Current Assets

Cash and cash equivalents

The 15.3% decrease, from R$ 12.465 billion on December 31, 2013 to R$ 10.555 billion on December 31, 2014, occurred as a function of the non-recurring transaction related to the sale of 25% of payable gold flow in 2013 and the negative impact from the drop of commodities prices in the generation of operational cash flow in 2014, partially offset by the increase of volume and reduction of expenses.

Inventories

The 23.7% increase, from R$ 9.662 billion on December 31, 2013 to R$ 11.956 billion on December 31, 2014, was mainly due to the ramp up of the distribution center in Malaysia, as well as exchange variation.

Taxes on estimated profit

Taxes on estimated profit decreased by 24.5%, from R$ 5.563 billion on December 31, 2013 to R$ 4.200 billion on December 31, 2014, due to offset values of income tax and social contribution.

Non-current assets held for sale

The sale of assets totaled R$ 9.669 billion on December 31, 2014, refers mainly to the divestment in power generation assets and share held in the assets in Nacala, comparing to R$ 8.822 billion on December 31, 2013 refers to the sale of power generation assets and general load.

Table of Contents

Noncurrent Assets

Deferred taxes on profit

The amount of deferred taxes on profits decreased by 0.3%, from R$ 10.596 billion on December 31, 2013 to R$ 10.560 billion on December 31, 2014, due to fiscal loss.

Investments

Investments increased by 30.7%, from R$ 8.397 billion on December 31, 2013 to R$ 10.978 billion on December 31, 2014, reflecting the investment increase on affiliates due to the consolidation of Vale Logística da Argentina S.A. which investment was partially sold and the remaining portion is no longer consolidated.

Fixed Assets

Fixed assets increased by 8.5%, from R$ 191.308 billion on December 31, 2013 to R$ 207.507 billion on December 31, 2014, due to Capex execution, mainly the S11D project, including the Integrated Logistic Corridor of Nacala - CLN and partial impairment of assets related to Onça Puma in 2012.

Current liabilities

Accounts payable to suppliers and contractors

Accounts payable to suppliers and contractors increased by 30.9%, from R$ 8.837 billion on December 31, 2013 to R$ 11.566 billion on December 31, 2014, was basically due to the extension on the average due date of payments.

Derivatives

Derivatives increased by 576.3%, from R$ 0.556 billion on December 31, 2013 to R$ 3.760 billion on December 31, 2014, basically due to appreciation of US dollar against real, with a loss in swap mark-to-market, which goal is to reduce the volatility of cash flow.

Table of Contents

Loans and financing

The 9.4% reduction in the long-term loan current debt, from R$ 4.158 billion on December 31, 2013 to R$ 3.768 billion on December 31, 2014, was due to the due date of long term debts, acquired in reais.

Liabilities related to non-current assets held for sale and discontinued operations

Liabilities related to non-current assets held for sale decreased by 72.0%, from R$ 1.050 billion on December 31, 2013 to R$ 0.294 billion on December 31, 2014, due to the conclusion of the general load sale and negotiation at the Nacala corridor with Mitsui.

Noncurrent Liabilities

Derivatives

Derivatives increased by 22.3%, from R$ 3.496 billion on December 31, 2013 to R$ 4.276 billion on December 31, 2014, basically due to appreciation of US dollar against real, with a loss in swap mark-to-market, which goal is to reduce the volatility of cash flow.

Loans and financing

Loans and financing increased by 12.2%, from R$ 64.819 billion on December 31, 2013 to R$ 72.749 billion on December 31, 2014, reflecting exchange variation, as considerable portion of loans were acquired in foreign currency.

Provisions for contingencies

Provisions for contingencies increased by 13.9%, from R$ 2.989 billion on December 31, 2013 to R$ 3.405 billion on December 31, 2014, reflecting the changes to the prognosis of part of the lawsuits where Vale appears as party.

335

Table of Contents

Obligations for asset retirement

Obligations for asset retirement increased by 43.9%, from R$ 5.969 billion on December 31, 2013 to R$ 8.588 billion on December 31, 2014, was due to the reduction in the discount rate and annual revision of realized estimates.

Table of Contents

Debentures

Debentures increased by 10.2%, from R$ 4.159 billion on December 31, 2013 to R$ 4.584 billion on December 31, 2014, due to mark-to-market.

Shareholders Equity held by Controlling Shareholders

Shareholders equity held by controlling shareholders decreased by 1.3%, from R$ 148.346 billion on December 31, 2013 to R$ 146.414 billion on December 31, 2014, due to realization of provisions for shareholders compensation.

Analysis of Cash Flows 2015 vs. 2014

The table below presents the values for the cash flow statements for the fiscal years ended December 31, 2015 and December 31, 2014:

(in R$ million)	2015	%	2014
Cash flow from operational activities:			
Net gain (loss) in the period	(45,997)	n/a	219
Adjustments to consolidate net profit with revenues from operational activities	61,716	173.4	22,573
Net revenue from operational activities	15,719	(31.0)	22,792
Net revenue used in investment	(20,116)	(10.0)	(22,360)
Net revenue from (used in) financing	5,250	n/a	(8,634)
Increase (reduction) in cash and cash equivalents	853	n/a	(3,202)
Beginning of the year cash and cash equivalents	10,555	(15.3)	12,465
Effect of exchange variations in cash and cash equivalents	2,614	102.3	1,292
End of the year cash and cash equivalents	14,022	32.8	10,555

Year ending on December 31, 2014 compared to the year ended on December 21, 2015

Table of Contents

Net operating revenues

Net operating revenues totaled R$ 15,719 billion in 2015, compared to R$ 27,792 billion in 2014, representing a 31.0% decrease, basically due to the drop in the iron ore price.

Net Operating revenues from (used in) investments

Net revenues used in investments totaled R$ 20,116 billion in 2015, compared to R$ 22,360 billion in 2014, representing a 10.0% decrease, due to Company adjustment to projects, as

Table of Contents

some of them are entering the deployment phase, as is the case of S11D project, one of the largest of the Company, expected to end in the second half in 2016.

Net revenue from (used in) financing

Net revenue from (used in) financing totaled R$ 5,250 billion in 2015, compared to R$ 8,634 billion in 2014, due to decrease in the payment of dividends to shareholders and the MBR transaction, comprised by the sale of class-A preferred shares of MBR, representing 36.4% of its capital.

Analysis of Cash Flow 2014 vs. 2013

The following table shows the values related to the consolidated cash flow statements for the years ended December 31, 2013 and December 31, 2014:

(in R$ million)	2014	%	2013
Operating cash flow:			
Net gains (loss)	219	n/a	(258)
Adjustments to consolidate net profit with revenues from operational activities	27,573	(15.1)	32,491
Net revenue from operational activities	27,792	(13.8)	32,233
Net revenue used in investment	(22,360)	(3.4)	(23,150)
Net revenue from (used in) financing	(8,634)	(8.1)	(9,396)
Increase (reduction) in cash and cash equivalents	(3,202)	n/a	(313)
Beginning of the year cash and cash equivalents	12,465	4.6	11,918
Effect of exchange variations in cash and cash equivalents	1,292	50.2	860
End of the year cash and cash equivalents	10,555	(15.3)	12,465

Year ended on December 31, 2013 compared to year ended on December 31, 2014

Table of Contents

Net operating revenues

Net operating revenues totaled R$ 27.792 billion in 2014, compared to R$ 32.233 billion in 2013, representing a 13.8% decrease, basically due to the drop in the iron ore price.

Net Operating revenues from (used in) investments

Net revenues used in investments totaled R$ 22.360 billion in 2014, compared to R$ 23.150 billion in 2013, representing a 3.4% decrease, due to the reduction in investment sale.

Table of Contents

Net revenue from (used in) financing

Net revenue from (used in) financing totaled R$ 8.634 billion in 2014, compared to R$ 9.396 billion in 2013, representing an 8.1% decrease, due to the funding levels in 2014.

Table of Contents

10.2 Operating and Financial Results

a. Results of Vale Operations, in particular:

i. Description of key components of revenue

In 2015, net operating revenues totaled R$ 85.5 billion with operational margin (prior to gains from the measurement of the sale of noncurrent assets) of 10.6%. Operating loss was R$ 25.4 billion, a R$ 42.0 billion variation compared to the operating profit in 2014, mainly due to reduction in the prices of its products.

This year, that Company has sought after several opportunities to improve its margin. Vale has presented an 18.2% reduction in net operational revenues (including SG&A, research and development, pre-operational and stoppage, and other expenses), corresponding to R$ 1.7 billion, compared to the same period in 2014, especially marked by the revenue arising out of the *gold stream* operation and reduction in the provision for fixed asset retirement, due to risk change.

In addition, Vale had a R$ 31.8 billion variation in impairment of assets , from R$ 2.7 billion in 2014 to R$ 34.5 billion in 2015, due to drop in the price of our commodities, with impact in the adjustment of the performance assumption and return of our activities. Cash generation measured by Adjusted EBITDA, was R$ 23.7 billion in the fiscal year ending on December 31, 2015.

On December 31, 2014, Vale net operational revenue was R$ 88.3 billion, and the operational margin (prior to the recoverable values of noncurrent assets and loss in the measuring of the sale of noncurrent assets) was 22.3%. The operational profit was R$ 16.6 billion in 2014, an approximate 50% reduction compared to the operational profit in 2013, mainly due to a drop in ore prices. Continuous Company efforts to cut costs, investment discipline and focus on core business were seen this year. Vale had a 11.9% reduction in net operational costs (including SG&A, research and development, pre-operational and stoppage, as well as other costs), corresponding to R$ 1,277 billion, relative to 2013. This drop was due mainly to the reduction of costs related to operation stoppage and optimization in the Company s cost structure, after adjustments made in 2013. Additionally, in 2014, Vale had a reduction of 49.7% in the impairment of assets, R$ 5,390 billion in 2013 to R$ 2,713 billion in 2014, due to return on the Onça Puma operation. Cash generation, measured in Adjusted EBITDA(1), was R$ 31.1 billion in 2014.

In 2013, Vale net operational revenue was R$ 101,490 billion and the operational margin (prior to the recoverable values of noncurrent assets and loss in the measuring of the sale of noncurrent assets) was 37.7%. The operational profit was R$ 32,340 billion in 2013.

Table of Contents

In the fiscal year ending on December 31, 2015, operating loss measured by EBIT was R$ 28.3 billion, compared to the EBIT operating profit of R$ 17.6 billion in the same period in 2014. In 2015 operating loss was R$ 25,4 billion while in 2014 and 2013, operating profit was R$ 16.6 billion and R$ 32.3 billion, respectively.

Adjusted EBITDA

	Fiscal year ending on December 31		
in R$ billion	**2013**	**2014**	**2015**
Net operating revenue	101,490	88,275	85,499
Adjusted EBIT	38,238	19,724	9,101
Adjusted EBITDA	49,027	31,134	23,654
Net profit (loss) of the fiscal year	(0,258)	0,219	(45,997)
Shareholders compensation (controller)	9,319	9,739	5,026

EBITDA

	Fiscal year ending on December 31		
in R$ billion	**2013**	**2014**	**2015**
Net profit (loss) of the period	(0,258)	0,219	(45,997)
Taxation on profit	15,249	2,600	(18,879)
Net financial income	18,442	14,753	36,538
EBIT (Earnings Before Income and Taxes)	33,433	17,572	(28,338)
Depreciation, amortization, and depletion	8,953	10,108	13,489
EBITDA (Earnings Before Income, Taxes, Depreciation, and Amortization)	42,386	27,680	(14,849)

Table of Contents

Net operating revenue presented (i) a 3.1% decreased compared to fiscal years ending on December 31, 2015 and 2014 and (ii) a 13.0% decrease compared to fiscal years ending on December 31, 2014 and 2013, both due to the drop in the price of *commodities.*

Individually, the most important product in terms of revenue generation in fiscal years 2015, 2014, and 2013 was iron ore.

	Fiscal year ending on December 31					
R$ million	**2013**	**%**	**2014**	**%**	**2015**	**%**
Ferrous minerals	75,668	74.6	60,395	68.4	55,413	64.8
Iron ore	60,653	59.8	45,341	51.4	41,427	48.5
Pellets	12,972	12.8	12,397	14.0	11,916	13.9
Manganese and ferroalloys	1,140	1.1	933	1.1	518	0.6
Others	903	0.9	1,724	2.0	1,552	1.8
Coal	2,188	2.1	1,740	2.0	1,739	2.0
Base metals	15,746	15.5	18,137	20.6	20,491	24.0
Nickel and others	12,566	12.4	14,703	16.7	15,534	18.2
Finished copper	3,180	3.1	3,434	3.9	4,957	5.8
Fertilizers	6,038	6.0	5,656	6.4	7,442	8.7
Potash	434	0.4	363	0.4	443	0.5
Phosphate	4,443	4.4	4,259	4.8	5,806	6.8
Nitrogen	990	1.0	820	0.9	999	1.2
Others	171	0.2	214	0.3	194	0.2
Others	1,850	1.8	2,347	2.6	414	0.5
Net Income	101,490	100.0	88,275	100.00	85,499	100.0

Table of Contents

The sale of ferrous minerals - iron ore, pellets, manganese ore and ferroalloy represented 64.8% of total net operating revenues in the year ended on December 31, 2015, relative to 68.4% in the year ended on December 31, 2014. In 2013, the total net operational revenue of ferrous minerals was 74.6%.

Table of Contents

In 2015, 2014, and 2013, the base metals participation in the total net revenue was 24.0%, 20.6%, and 15.5%, respectively.

In 2015, 2014, and 2013, fertilizer revenue was 8.7%, 6.4%, and 6.0%, respectively.

In 2015, 2014, and 2013, the contribution by other products in net revenue represented 2.5%, 4.6%, and 3.9%, respectively.

In the fiscal year ending on December 31, 2015, sales to Asia represented 52.6% of total revenues, in line with 52.2% in 2014 and lower than 57.1% in 2013. Sales to the Americas amounted to 24.1%, lower than 25% in 2014 and higher than 19.7% in 2013. Revenues from Europe represented 18.2% in this period, 17.8% in 2014, and 18.6% in 2013, while the remainder contributed with 5.2% of the revenues for the fiscal year ending on December 31, 2015.

Considering sales per country, China was responsible for 36.0% of our revenue in the fiscal year ending on December 31, 2015, followed by Brazil with 15.3%, Japan with 7.6%, Germany with 5.6%, Canada with 4.3%, and the USA with 3.3%. In 2014, China was responsible for 33.7% of our revenues, followed by Brazil with 15.8%, Japan with 9.7%, Germany with 6.1%, South Korea with 4.1% and the United States and Canada with 3.7%. In 2013, China was responsible for 40.7% of our revenue, followed by Brazil with 13.1%, Japan with 8.7%, Germany with 7.0%, South Korea with 3.9%, and the United States with 2.8%.

	Fiscal year ended on December 31					
R$ million	**2013**	**%**	**2014**	**%**	**2015**	**%**
North America	**5,065**	**5.0**	**6,486**	**7.4**	**6,500**	**7.6**
USA	2,823	2.8	3,210	3.7	2,803	3.3
Canada	2,242	2.2	3,276	3.7	3,697	4.3
South America	**14,960**	**14.7**	**15,561**	**17.6**	**14,073**	**16.5**
Brazil	13,295	13.1	13,946	15.8	13,081	15.3
Others	1,665	1.6	1,615	1.8	992	1.2
Asia	**57929**	**57.1**	**46,076**	**52.2**	**44,976**	**52.6**
China	41,277	40.7	29,762	33.7	30,812	36.0
Japan	8,853	8.7	8,530	9.7	6,497	7.6
South Korea	3,897	3.9	3,639	4.1	2,633	3.1
Taiwan	2,103	2.1	1,697	1.9	2,064	2.4
Others	1,799	1.8	2,448	2.8	2,970	3.5
Europe	**18,816**	**18.6**	**15,732**	**17.8**	**15,535**	**18.2**
Germany	7,104	7.0	4,936	5.6	4,746	5.6
France	2,105	2.1	1,329	1.5	1,086	1.3
United Kingdom	2,156	2.1	1,665	1.9	1,285	1.5
Italy	2,263	2.2	345	0.4	1,531	1.8
Others	5,188	5.2	7,457	8.4	6,887	8.1
Other countries	**4,630**	**4.6**	**4,420**	**5.0**	**4,415**	**5.2**
Net Revenues	**101,490**	**100.0**	**88,275**	**100.0**	**85,499**	**100.0**

Table of Contents

ii. Factors that materially affected the operating results

Demand and prices

The following table summarizes the average sale price of the main products for the periods indicated.

	Fiscal year ended on December 31,		
	2013	2014	2015
	$/metric ton, unless otherwise indicated(5)		
Iron ore	231.30	178.89	148.94
Pellets	317.96	292.39	268.13
Manganese	340.74	283.23	191.54
Ferroalloys	2,286.62	3,422.18	3,018.72
Coal			
Thermal coal	174.93	159.30	175.02
Metallurgical Coal	280.29	245.76	285.63
Nickel	32,038.31	38,679.67	39,012.71
Copper	14,847.03	14,164.84	14,566.75
Potash	1,864.07	837.78	1,061.87
Phosphates			
MAP	1,223.37	1,277.29	1,708.41

(5) Amounts converted using the average exchange rate in each period: R$ 1.9546 in 2012, R$ 2.1605 in 2013, and R$ 2.354716 in 2014 and R$ 3.3387 in 2015.

Table of Contents

	Fiscal year ended on December 31,		
	2013	2014	2015
	$/metric ton, unless otherwise indicated(5)		
TSP	1,007.12	1,010.13	1,328.97
SSP	573.51	500.64	682.60
DCP	1,162.35	1,392.84	1,852.58
Nitrogen	1,113.87	1,423.21	1,850.00

The following table summarizes the average volume sold of main products for the periods indicated.

	Fiscal year ended on December 31,		
	2013	2014	2015
	(in thousand metric tons)		
Fine iron ore	251,029	255,877	276,393
Pellets	40,992	43,684	46,284
Manganese	2,116	1,879	1,764
Ferroalloys	183	151	69
Coal			
Thermal coal	726	1,152	892
Metallurgical Coal	7,353	6,330	5,614
Nickel	261	272	291
Copper	353	353	398
Potash	531	475	462
Phosphates			
MAP	1,133	1,040	1,081
TSP	681	749	744
SSP	1,969	2,091	1,847
DCP	461	493	459
Nitrogen	890	680	3,193

Table of Contents

Iron ore and pellets

The demand for iron ore and pellets is a result of the global demand for carbon steel, which in turn is highly influenced by global industrial production. The pricing of iron ore and pellets is done according to several levels of quality and physical characteristics. Several factors affect the prices of different types of iron ore, such as the iron content in deposits, the size of particles, humidity and the type and concentration of contaminants (such as phosphorus, alumina and manganese) in the ore. Generally, the classification of ore into thin ore, lump ore and pellet feed determines price differences.

Demand from China has been one of the main drivers of worldwide demand and prices.

Chinese imports of iron ore reached 953 million metric tons in 2015, 2% above the level of 933 million metric tons in 2014, which in turn was 15% above the level of 810 million metric tons in 2013. The higher ore import in 2015 was despite a 2.3% decrease in domestic steel production, reinforcing the hypothesis of mines closure in China.

Our iron ore prices are grounded in a variety of price option that are usually based on spot indices for the specification of prices charged to clients. Final prices may be based on spot rates for months prior to the shipping date or the shipping quarter, or according to the spot rate at delivery to customer.

Fine iron ore prices command premiums as a function of the content of iron. The lump ore and pellet prices contain premiums in relation to fine iron ore prices and are determined based on client negotiations. The average prices for iron ore in fiscal year ending on December 31, 2015 were 40.9% and 60.2% lower than the average prices in 2014 and 2013, respectively. The average price for pellets on December 31, 2015, was 35.3% and 46.5% lower compared to average prices in 2014 and 2013, respectively.

Manganese and ferroalloys

The prices of manganese ore and ferroalloys are mainly influenced by trends in the carbon steel market. The prices of ferroalloys are also influenced by the prices of its main inputs, such as manganese ore, energy and coke. Manganese ore sales are based on the spot market or calculated on a quarterly basis. Ferroalloys prices are determined on a quarterly basis.

Coal

The demand for metallurgical coal is driven by the demand for steel, especially in Asia. The demand for thermal coal is directly related to electricity consumption, which will continue to be driven by worldwide economic growth, especially in emerging economies. Since April 2010, the prices for metallurgical coal have been established on a quarterly basis for most volumes sold in the transoceanic market, while some players are selling it on a quarterly basis, and a minority continues to use annual pricing. The prices of thermal coal are set in spot negotiations and/or through annual contracts.

Nickel

Nickel is traded on the London Metal Exchange (LME), and it is mainly used to produce stainless steel. Most nickel products are priced using a discount or a premium to the LME price, depending on the technical and physical characteristics of the product. Nickel demand is heavily affected by production of stainless steel, which represented 66% of consumption in 2015 and 68% in 2014.

Vale has short-term fixed-volume contracts with customers for the majority of our expected annual nickel sales. These contracts, together with its sales of nickel products to be used for other purposes (high nickel alloys, steel alloys, forging, plating, batteries and special applications), provide stable demand for a significant portion of its annual production. In 2015, 52% of the refined nickel sales were destined to applications outside the stainless steel industry. This, when compared to the industry average of 34%

Table of Contents

among nickel producers, results in its sales volume being more stable. As a result of its focus on such higher-value segments, the average realized nickel prices have typically exceeded LME prices.

Table of Contents

Copper

Copper prices are determined on the basis of: (a) copper prices in final markets, such as the LME and the NYMEX; and (b) for intermediate products, such as copper concentrate (which represents the majority of the company s sales) and copper anode, treatment and refining rates are negotiated with each client. According to a pricing system known as MAMA (month after month of arrival), sale prices of copper concentrate and anode are provisionally set at the time of shipment, and the final prices are based on the LME at a future time, typically three months after shipment of product.

Fertilizers

The demand for fertilizers depends on the same market fundamentals as those for global demand for minerals, metals and energy. The rapid *per capita* growth of emerging economies causes changes in food, marked by an increase in the consumption of proteins, which contributes to higher demand for fertilizers. Demand is also driven by biofuels that are emerging as an alternative source of energy to reduce global dependency on greenhouse gases [sic], and essential raw materials for the production of biofuels sugar cane, corn and palm which are intensively used in fertilizers.

Fertilizers are sold in the market mainly on a cash basis using international reference prices, although certain large importers, such as China and India, often sign annual contracts. Seasonality is an important factor for determining price throughout the year, given that agricultural production in each region depends on the climactic conditions of the harvest.

Exchange Rates

The impact of exchange rate variations on Vale s operational results are described in item 10.2 (b) of this Reference Form.

b. Variations in revenues attributable to changes in prices, exchange rates, inflation, changes in volumes and the introduction of new products and services

Exchange rate variations

Most of the Company s revenues are expressed in US dollars, whereas most of our costs of goods sold are expressed in other currencies, mainly the Brazilian *real* (49% on December 31, 2015), the US dollar (34% on December 31, 2015), Canadian dollars (13% on December, 31, 2015), Indonesian rupees, Australian dollars, the euro, and others. As a result, changes in exchange rates affect the Company s operating margin.

Most of our long-term debt is expressed currencies other than the Brazilian real, mainly in American dollars (approximately 81% on December 31, 2015). Due to the fact that Vale s functional currency is the Brazilian *real*, changes in the value of the US dollar against the Brazilian *real* result in exchange gains or losses on our net liabilities, which, in turn, affect our financial results.

On December 31, 2015 our debt expressed in *reais* was R$ 20.508 billion. Since most of our revenue is in US dollars, Vale uses derivatives to convert our debt from Brazilian *reais* to US dollars. As a consequence of the depreciation of the Brazilian *real* against the US dollar in the

Table of Contents

fiscal year ending on December 31, 2015 and inflation, the net exchange rate and monetary variation caused a negative impact on net profits of R$ 25.5 billion. The net result of the currency and interest rate swaps, structured mainly to convert the debt expressed in Brazilian *reais* into US dollars to protect our cash flow from currency price volatility, produced a negative

Table of Contents

accounting effect of R$ 4.6 billion in the fiscal year ending on December 31, 2015, of which R$ 1.0 billion generated a negative impact on the cash flow.

Regarding years 2013 and 2014, most part of the company revenue was in US dollars, while most part of the costs of assets sold was in other currencies, especially real (54% in 2013 and 54% in 2014, respectively), additional to US dollar (27% in 2013 and 30% in 2014, respectively), Canadian dollar (14% in 2013 and 13% in 2014 respectively), Indonesian Rupiah, Australian dollars, Euro, and others. Exchange rates, thus, affected the Company s operating margin.

Most of the long term debt in years 2013 and 2014 was in currencies other than real, especially US dollar (70% in 2013 and 70% in 2014). As Vale s functional currency is real, changes to the US dollar against the real, caused variations to net liabilities, resulting in exchange gains or losses in the financial income.

On December 31, 2013 and December 31, 2014, the debt in reais was R$ 18,807 billion and R$ 20.952, respectively. As most of the revenue was in US dollars, Vale used derivatives to translate the debt in real into US dollars. As consequence of real depreciation against the US dollar in 2013 and in 2014 (additional to inflation, this year), net exchange and monetary variation caused negative impact on net profit of R$ 6,484 billion in 2013 and R$ 5,445 billion in 2014. The net result of the currency and interest rate swaps, structured mainly to convert the debt expressed in Brazilian *reais* into US dollars to protect our cash flow from currency price volatility, produced a negative accounting effect of R$ 1,872 billion in 2013, where R$ 362 million generated positive cash effect, and (ii) negative accounting effect of R$ 1.8 billion in 2014, where R$ 11 million generated negative cash effect.

a) Variations in the inflation rates

The company s revenues are not significantly affected by inflation rates, and main variations in operational income is attributable to price changes, volume changes and the introduction of new products and services

For more information on changes to its products prices and services, as well as changes to the volumes sold, see item 10.2(a)(ii) of this Reference Form.

c. Impact of inflation, price variations of main inputs and products, exchange rate and interest rates on operating results and the issuer s financial result, when relevant

For comments on the inflationary impact, price variations in the main products and exchange rates, see item 10.2 (b) of this Reference Form.

353

Table of Contents

Interest Rate

Vale exposed to the risk of interest rates for loans and financings. Debt tied to interest rates in US$ consists mainly of loans, including export prepayment operations, loans from commercial banks and multilateral organizations. In general, these debts are indexed to the LIBOR (London Interbank Offered Rate). The floating rate of its debt expressed in Brazilian *reais* includes debentures, loans obtained from the BNDES, fixed assets and financing for the purchase of services in the Brazilian market. The interest on these obligations is tied primarily to the CDI (Interbank Deposit Certificate), the reference interest rate on the Brazilian interbank market and the TJLP (long-term interest rate). We use swap operations to convert most part of this debt into fixed rates in US dollars. On December 31, 2015, before swap operations, 18% of the

Table of Contents

debt was in reais and the remaining 82% was in other currencies. On December 31, 2014, 22% of the debt was on reais and the remaining 78% was in other currencies. On December 31, 2013, 22% of the debt was in reais and the remaining 78% was in other currencies.

On December 31, 2015, around 42.4% of the debt was tied to the floating interest rate, compared to approximately 45.2% on December 31, 2014 and 45.3% on December 31, 2013.

Fuel and gas costs are an important component of our production cost and represented 6.3% of our total cost of products sold in the fiscal year ending on December 31, 2015; 7.33% in 2014; and 7.4% in 2013. Decreases in the price of oil and gas impact positively all the Company businesses according to local prices used by each unit. Electricity costs were 2.8% the fiscal year ending on December 31, 2015; 2.4% in 2014, and 2.7% in 2013.

The non-current assets impairment registered in 2015 resulted in a loss of about R$ 34,553 billion. This amount refers to the Company s assets recoverable value, based on the premise that includes the discounted cash flow and the commodities price.

Vale does not provide guidance regarding its future financial performance. Vale seeks to disclose as much information as possible about its views on the different markets where it operates, its strategic guidelines and implementation in order to give the capital markets a sound basis for their expectations regarding the Company s performance in the medium and long term.

Table of Contents

10.3 Events with relevant effects, occurred and expected, in the financial statements

a. Introduction or disposal of operating segment

In September 2013, the Company made public its intention to give away the control over its subsidiary VLI S.A. (VLI), responsible for operations in the General Load sector. Consequently, the General Load sector in 2013 was treated as under a phasing out process and assets and liabilities were reclassified as non-current assets/liabilities held for sale.

As part of the closure process, Vale signed share transfer agreements of (a) 20% of the VLI s capital to Mitsui & Co. Ltd. (Mitsui) for the amount of R$ 1.5 billion, (b) 15.9% to Accrued Severance Pay FGTS (Portuguese acronym) (FGTS) in the amount of R$ 1.2 billion, which equity is managed by Caixa Econômica Federal. This transaction was concluded on April 14, 2014. Revenue from the sale to FI-FGTS and R$ 800 million of proceedings of the sale to Mitsui will be comprised by capital investment on VLI, who issued new shares to Mitsui and FI-FGTS. Amount invested in VLI will be used to fund part of the VLI s investment plan. The remaining revenue of the transaction, R$ 709 million, was paid directly to Vale by Mitsui.

Additionally, on December 23, 2013, Vale entered into an agreement with a fund managed by Brookfield Asset Management (Brookfield) to sell 26.5% of its share in VLI, for R$ 2 billion. This transaction was concluded on August 19, 2014, and now Vale holds 37.6% of the capital of VLI. Vale, Mitsui, FI-FGTS and Brookfield jointly control VLI, under a shareholders agreement.

b. Incorporation, acquisition or divestiture of stakeholder positions

Main Acquisitions

2015

There were no shareholding acquisitions in fiscal year 2015 that have caused or may cause relevant effects on the financial statements.

2014

There were no shareholding acquisitions in fiscal year 2014 that have caused or may cause relevant effects on the financial statements.

2013

Share increase in the Belvedere coal project.

On January 31, 2013, Vale Belvedere Pty Ltd. signed agreements to complete a purchase option exercised in June 2010 by means of which it purchased 24.5% additional share in the Belvedere da Aquila Resources Limited (Aquila) coal project. The purchase price of A$ 150 million (equivalent

Table of Contents

to US$ 156 million using the AUD/USD tax rate of 1.04) is equivalent to the market price, using as base date the date when the option is exercised (June 2010), as determined by an independent assessor hired by Vale and Aquila at the time. The outcome of this transaction is that Vale Belvedere Pty Ltd. increased is Belvedere share to 100%. Additionally, Vale Belvedere Pty Ltd. agrees to pay the amount of A$ 20 million (equivalent to US$ 21 million) to settle lawsuits and disputes associated with Belvedere and Aquila.

Overall, Vale paid US$ 338 million for 100% of Belvedere. Belvedere is a future growth option. It is a project for an underground coal mine located in the southern Bowen Basin, near the city

Table of Contents

of Moura, in the state of Queensland, Australia. The project was approved by Vale s Administrative Council. According to preliminary estimates, Belvedere can potentially reach a production capacity of 7.0 million metric tons per year of mainly metallurgic coal.

Increased share in the Capim Branco I and II hydroelectric power plants

On March 12, 2013, Vale, together with Cemiq Capim Branco Energia S.A., purchased for R$ 223 million, exercising its preemptive right set forth in the consortium agreement of Consórcio Capim Branco, 12.47% interest held by Suzano Papel e Celulose S.A. and Suzano Holding S.A. in the Capim Branco I and II in Minas Gerais. Consequently, Vale now holds 60.89% interest in Capim Branco I and II, being able to generate 1,524 gigawatts hour per year by the end of the concession in 2036. The purchase of the additional shares of Capim Branco I and II hydroelectric power plants adds value to the extent that there is immediate reduction in the cost of energy for our operations; and it is a low risk investment with a clearly higher return to Vale capital expenditure.

Main investment disposals and asset sales

In accordance with the strategy, the Company continues to reduce our stakes in non-core assets. The following is a summary of the main disposals and sales of assets during the three-year period under discussion.

2015

Sale of part of the gold stream produced as byproduct

On March 2, 2015, Vale has entered into an agreement with Silver Wheaton for the sale of other 25% of the gold stream payable produced as byproduct in Salobo copper mine during the mine use life. In this transaction, Vale and Silver Wheaton have signed an amendment to the original agreement for gold purchase, dated February 2013, to include the purchase of this additional gold stream with 25% of payable gold.

Vale has received an initial payment in cash in the amount of US$ 900 million and will receive future cash payments for each ounce (oz) of gold delivered to Silver Wheaton based on the smaller amount between US$ 400 per ounce and market price. This amount will be updated annually at 1% starting in 2017.

Vale may also receive an additional payment in cash, depending on its decision to expand the copper processing capacity at Salobo for additional 28 Mtpa before 2036. Salobo I and Salobo II, that are in ramp-up process, will have total processing capacity of 24 Mtpa run-of-mine (ROM). This additional amount may vary between US$ 88 million and US$ 720 million, depending on the time and size of the expansion.

358

Table of Contents

Restructuring power generation assets

On February 27, 2015, Vale has concluded the transaction that began in 2013 with Cemig GT to create the *joint venture* Aliança Geração de Energia S.A., and on March 31, 2015, Vale concluded the transaction with CEMIG GT for the sale of 49% of Vale s share in Norte Energia. As these transactions are related to the agreement with Cemig GT announced in December 2013, see item Sale of power generation assets below related to fiscal year 2013, for additional information.

Sale of Share at MBR

On July 29, 2015, Vale has executed the Purchase and Sale Agreement of Shares and other issues, with the Fundo de Investimento em Participações Multisetorial Plus II (FIP Plus II), which shares are held on this date by Banco Bradesco BBI S.A. (BBI), under which it promised to sell the class A preferred shares representing 36.4% of the capital stock of Minerações Brasileiras Reunidas S.A. MBR (MBR), for R$ 4 billion, subject to suspension conditions usually applicable, including prior approval of the operation by CADE. On September 1, 2015, the sale was concluded for the agreed price, which was transferred in one single payment on that date, and Vale now holds directly and indirectly 61.9% of the capital stock and 98.3% of the common capital of MBR. Vale also holds a purchase option of shares issued by MBR currently held by BBI, successor of FIP Plus II.

Sale of maritime transportation assets and cooperation agreement

On December 8, 2015, Vale and a consortium led by ICBC Financial Leasing, a wholly-owned subsidiary controlled by Industrial and Commercial Bank of China, concluded a purchase and sale transaction of four VLOCs with 400,000 tons. The transaction totaled US$ 423 million.

2014

Sale of share in Vale Moçambique and the Logistic Corridor of Nacala

On December 9, 2014, Vale announced the execution of an investment agreement with Mitsui, under which Mitsui will hold 15% of Vale s 95% share in Vale Moçambique (VM) (concessionaire of the Moatize mine) and 50% of Vale s share in the Logistic Corridor of Nacala (CLN).

Table of Contents

The transaction is comprised by the capital increase and partial assignment of the debt held by VM and CLN with Vale, and Vale now indirectly holds 81% of the Moatize mine and approximately 35% of the Nacala Logistics Corridor, under joint control with Mitsui.

The amount attributed to Mitsui s 15% share in VM is US$ 450 million. Moreover, Mitsui may pay US$ 30 million more related to an *earn out* clause. On the other hand, *claw-back* clause of up to US$ 120 million is included in these US$ 450 million. The earn outs amounts as well as the claw-back amounts are conditioned to mass recovery goals of the refining plant and production goals agreed upon between Vale and Matsui. As result of these clauses, the final amount attributed to the 15% share in VM may vary between US$ 330 million and US$ 480 million. Additionally, Mitsui will be responsible for funding, *pro-rata* to its 15% share, its portion in the investment needed to complete the expansion of the Moatize mine, which amount is estimated at US$ 188 million.

Upon concluding the transaction, Mitsui will contribute with US$ 313 million to fund the CLN and, therefore, will hold 50% of some financial instruments, having joint control with Vale over the CLN. Until conclusion of this transaction and delivery by Mitsui, Vale will continue to fund the CLN with loans by Vale itself.

The conclusion of this transaction is subject to some precedent conditions and is expected to occur in 2016.

The transaction supports Vale s strategy to operate world-class assets, improves its balance sheet and reduces its need of future investment, while minimizing the exposure to project risk.

Sale of shares in Vale Florestar

On June 4, 2014, Vale announced the execution with a subsidiary of Suzano Papel e Celulose S.A. (Suzano Subsidiary), company that produces eucalyptus cellulose, an agreement to sell its entire share in Vale Florestar Fundo de Investimento em Participações (FIP Vale Florestar), in the amount of R$ 205 million. The usual precedent conditions and approvals, including by

Table of Contents

Conselho Administrativo de Defesa Econômica CADE were complied with and, thus, the transaction was effective on August 8, 2014.

BNDESPar, Petros and FUNCEF, other shareholders of FIP Vale Florestar also sold their respective shares to the Suzano Subsidiary that now holds 100% of the FIP Florestar.

Sale of maritime transport assets and cooperation agreement

In September 2014, Vale Internacional and China Ocean Shipping Company (Cosco) entered into a strategic cooperation agreement for maritime iron ore transportation. Under this agreement, four 400 thousand tons VLOCs (Very Large Ore Carriers), currently owned and operated by Vale Internacional, would be sold to Cosco. The sale was concluded on June 2, 2015, and the transaction summed US$ 445 million.

In September 2014, Vale Internacional and China Merchants Group entered into an agreement that covers a strategic cooperation between both maritime iron ore transportation companies. Under this agreement, the companies agreed upon a long term freight agreement to carry iron ore from Brazil to China, using VLOCs to be built and operated by China Merchants Group (Cooperation Agreement).

On May 19, 2015, Vale International and China Merchants Energy Shipping Co., Ltd. (CMES), subsidiary of China Merchants Group, entered into an amendment to the Cooperation Agreement, under which Vale would sell 4 VLOCs, with 400 thousand tons, to CMES, which are currently owned and operated by Vale for CMES. This sale was concluded on September 29, 2015, and the transaction totaled US$ 448 million.

2013

Sales of part of the gold flow produced as a by product

On February 28, 2013, Vale Switzerland, after approval by the Administrative Council, finalized the contract with Silver Wheaton Corp. (SLW), a Canadian company with share traded in the Toronto Stock Exchange and in the New York Stock Exchange, for the sale of 70% of payable gold flow produced as a byproduct in certain nickel mines in Sudbury, for a period of 20 years, and with Silver Wheaton (Caymans) Ltd. for the sale of 25% of the payable gold flow produced as byproduct in the Salobo copper mine, for the extent of the mine s longevity.

Table of Contents

In addition to the initial payment of US$ 1.9 billion in cash, Vale Switzerland received 10 million in SLW warrants with a strike price of US$ 65 and a 10-year term. Additionally, Vale will receive cash payments in the future for each ounce (oz.) of gold delivered to SLW as per the agreement, at the lowest amount between US$ 400 per ounce (plus a 1% annual adjustments starting in 2017 in the case of Salobo) and the market price.

This transaction frees a considerable amount contained in Vale s world class basic metals assets, to the extent that it attributes to the payable gold produced in Salobo de amount of US$ 5.32 billion, in addition to the payments of US$ 400 per ounce delivered, given that there will be no additional cost to extract the gold contained in the condensed copper produced at Salobo. The execution of Vale strategic plan reinforces the Company s confidence in the high potential of its world-class basic metals and the belief that they will general significant value to shareholders across the cycles.

Sale of shareholding position in VLI

For information on this operation, see item 10.3 (a) above.

Table of Contents

Norsk Hydro total share sale

On November 14, 2013, Vale announced that it would sell all of its 22% Norsk Hydro ASA (Hydro) shares, held by its subsidiary Vale Austria Holding GmbH (currently named Vale International Holdings GmbH) (Vale Austria), for the price of NOK 25.00 per share, resulting in the amount of NOK 11.196 billion, equivalent to US$ 1.822 billion (equivalent to R$ 4.243 billion). Vale Austria held these shares since 2011, when it restructured its aluminum assets portfolio. After this transaction is concluded, Vale Austria will no longer hold Hydro shares.

Under the same operation, on November 9, 2014, Vale Áustria sold to Norsk Hydro ASA (Hydro) shares issued by Mineração Paragominas S.A. representing 20% of the total capital, resulting from the exercise of a *put option.* The remaining 20% of shares held by Vale Áustria in the capital stock of Mineração Paragominas S.A. is also subject to a *put option* of Vale, which may be exercised starting on February 28, 2016.

Tres Valles share sales

On December 12, 2013, Vale concluded the Sociedade Contractual Minera Tres Valles (Tres Valles) sale for US$ 25 million (equivalent to R$ 54 million) to Inversiones Porto San Giorgio S.A. (ISG), a company controlled by the Chilean group Vecchiola S.A.

Tres Valles is a company that produces cathode copper in the Coquimbo region in Chile. The transaction included Vale total share of 90% in Tres Valles equity and also certain mining right held by Vale in the Coquimbo region. Tres Valles has underground and opencast mines and it has the production capacity of 18,500 metric tons of cathode copper.

Energy production assets sale

On December 19, 2013, Vale signed agreements with CEMIG Geração e Transmissão S.A. (CEMIG GT) for the sale of 49% of its shares of 9% of Norte Energia S.A. (Norte Energia) s equity, a company in charge of the construction, operation, and exploration of the Belo Monte hydroelectric power plant (Belo Monte), for R$ 310 million, and for the creation of a joint venture of energy generation assets.

Table of Contents

For this goal, two distinct vehicles were created to host energy generation projects and assets. In the first, Aliança Norte Energia Participações S.A., (Aliança Norte), comprised by Vale and CEMIG GT, respectively with 51% and 49% of the total capital. The incorporation of this company was done in two steps: initially, Vale transferred its 9% share in Norte Energia to its subsidiary Aliança Norte and, after that, CEMIG GT acquired 49% of the shares of this company for approximately R$ 310 million. This transaction was concluded on March 31, 2015, and Vale reduced its share in Norte Energia to 4.59%, although remaining entitled to acquire 9% of the power produced by the plant, under the terms in the power purchase long-term agreement executed in 2012.

The second vehicle, Aliança Geração de Energia S.A. (Aliança Geração de Energia), formed by Vale and CEMIG GT, respectively with 55% and 45% of the total equity, by means of contribution of its share in the following energy generation assets: Porto Estrela, Igarapava, Funil, Capim Branco I and II, Aimorés and Cadonga. These power plants hold 1.158 MW of attributed installed capacity and an average of 652 MW of secured energy. Electric energy supply to Vale operations will be secured by long-term contracts with Aliança Geração de Energia S.A., in order to maintain the same amount of energy currently supplied to our operations.

Table of Contents

The transaction related to Aliança Geração de Energia was concluded on February 27, 2015, and such conclusion had no impact on financial disbursements or financial investment and was executed by delivering the above-mentioned assets.

Purified phosphoric acid sales

On December 20, 2013, Vale signed a contract with Israel Chemicals Ltd. (ICL) for the sale of all of its shares, corresponding to 44.25%, of Fosbrasil s equity, a company that produces purified phosphoric acid, located in Cajati, in the state of São Paulo, for US$ 52 million.

On December 18, 2014, upon compliance with preconditions, including approval by the Conselho Administrativo de Defesa Econômica (CADE), this transaction was concluded by Vale that no longer holds any shares in Fosbrasil.

Log-in share sale

On December 26, 2013, Vale, according to the rules in CVM s Instruction No. 168, from December 23, 1991, as edited, held an auction to dispose of 28,737, 367 of common shares it owned from Log-in Logística Intermodal S.A. (Log-in), a company listed in the BM&FBOVESPA (ticker symbol: LOGN3), corresponding to all of the ordinary shares issued by Log-in and held by Vale, for the price of R$ 8.11 per share, totaling R$ 233 million. The completion of this transaction took place on January 2, 2014.

c. Unusual events or operations

2015

Impairment of assets

According to the accounting policy described in note 31(l) in the 2015 Financial Statement of the Company, the Company identified evidence of impairment in some intangible and fixed investments. I*mpairment* adjustments and reversions are presented below:

	Impairment (reversion)

Table of Contents

Segments by asset class	Assets or cash generating units	Impairment	2015	2014	2013
Fixed asset					
Iron ore	Center-Western System		2,023		
Iron ore	Simandou Project			2.794	
Iron ore	Others		133		
Pellets	North System (stopped operations)		213		
Pellets	Pelleting assets				427
Pellets	Others		12		
Other products and ferrous services	Others		80		
Coal	Mozambique	6,751	9,302		
Coal	Australia	286	2,146	787	
Nickel	Newfoundland (VNL)	9,188	13,394		
Nickel	New Caledonia (VNC)	14,545	5,660	628	
Nickel	Onça Puma	9,102	(976)	(4.295)	
Nickel	Others		102		
Copper	Others		138		
Potash	Potash Rio Colorado	78	2,123		4.963
Phosphate	Phosphate	15,002	(1,515)	1.576	
Other	Others		22		
			32,857	**1.490**	**5.390**
Intangible asset					
Coal	Australia		314		
Phosphate	Phosphate			1.223	
Impairment of noncurrent assets			**33.171**	**2,713**	**5,390**
Agreements					
Iron ore	Center-Western System		1,382		
Impairment of noncurrent assets and agreements			**34.553**	**2.713**	**5,390**
Investments on affiliates and joint ventures					
Pellets	Samarco Mineração S.A.		510		
Copper	Teal Minerals Inc.		1,217		
Others	Vale Soluções em Energia S.A.			71	
Impairment of investments on affiliates and joint ventures			**1.727**	**71**	

Table of Contents

2014

Impairment of assets

The Company identified evidences of *impairment* in some investments, intangible and fixed assets. Main impairment adjustments are presented below:

Assets	Cash Generating Unit	Net Accounting Value	Recoverable Value	Impairment Adjustment
Fixed Assets				
Coal	Australia assets (i)	1,228	441	787
Fertilizers	Assets in Brazil	10,769	9,193	1,576
Nickel	Operations at Onça Puma	2.245	6.540	(4.295)
Nickel	Operations in New Caledonia	15,071	14,443	628
Iron ore	VBG	2,794		2,794
		32,107	**30,617**	**1,490**
Intangible				
Fertilizers	Assets in Brazil	1,223		1,223
		1,223		**1,223**
		33,330	**30,617**	**2,713**
Investment				
Energy	Vale Soluções em Energia S.A.	71		71
		71		**71**

2013

Impairment of assets

The Company identified evidences of *impairment* in some investments, intangible and fixed assets. Main impairment adjustments are presented below:

Table of Contents

Assets	Cash Generating Unit	Net Accounting Value	Recoverable Value	Impairment Adjustment
Fertilizantes	PRC	6,489	1,526	4,963
Pelotas	Pellets Assets	527	100	427
		7,016	**1,626**	**5,390**

Table of Contents

REFIS

On November 2013, Vale decided to join the Tax Recovery Program REFIS for the payment of amounts relative to taxation on the profit from its subsidiaries and affiliated companies abroad from 2003 to 2012. By joining the REFIS, Vale generated a substation reduction in the amounts under dispute and is in consonance with the Company s goals to eliminate uncertainties to focus on its business, in order to keep potential benefits from legal appeals under the tax regime for its foreign subsidiaries.

Among the options offered by REFIS legislation, Vale chose to make early payment of debts relative to 2003, 2004, and 2006, and to pay principal tranches, fines and interest for the remaining years of 2005, and 2007 through 2012.

The payments face value resulting from Vale s decision reached the amount of R$ 22.2 billion. Considering early payments and payment of the first tranche, in 2013 R$ 6.0 billion were paid; in 2014, R$ 1.2 billion were paid; and in 2015, R$ 1.3 billion were paid. The remaining amount in 2015, that is, R$ 17.3 billion, will be paid in 154 monthly tranches. For further details, see Explanatory Note No. 19 of the accounting statements relative to the fiscal year ended on December 31, 2013.

Table of Contents

10.4 Significant changes in Accounting Practices - Corrections and Remarks in auditor s opinion.

a. Significant changes in accounting practices

2015

There were no significant changes in the accounting practices in the fiscal year that ended on December 31, 2015.

2014

In 2014 there was no significant change in any pronouncement. All pronouncements issued in 2014 aim adoption of new accounting guidelines starting in 2016, and among which IFRS 15 - *Revenue from Contracts with Customers* is the most significant one. IFRS 15 covers recognition of revenue from contracts with clients (except contracts within the scope of leasing agreements, insurance agreements, and financial instruments), and replaces the current pronouncements IAS 18 Revenue, IAS 11 *Construction contracts*, being adopted when effective, provided that there is deployment in Brazil CPC and approval by CVM and CFC.

(I) Pronouncements, interpretations, or updates issued by the IASB to be adopted after December 31, 2014

- *Sale or Contribution of Assets between an Investor and its Associate or Joint Venture*
- *Equity Method in Separate Financial Statements*
- *Accounting for Acquisitions of Interests in Joint Operations*
- *Clarification of Acceptable Methods of Depreciation and Amortization*
- *IFRS 15 Revenue from Contracts with Customers.*

(II) Pronouncements, interpretation, guidelines and revision approved by the CVM to be adopted after December 31, 2014

- CVM Deliberation 733, dated December 23, 2014 Approves the Technical Pronouncements Revision Document no. 07 related to Pronouncements CPC 18, CPC 35 and CPC 37 issued by the Accounting Pronouncements Committee

Table of Contents

(III) Pronouncements, interpretations and guidelines issued and/or updated by CPC, adopted during year 2014

- ICPC 09 (R2) Individual Financial Statements, Separate Statements, Consolidated Statements and Application of the Equity Method
- ICPC 19 - Taxes
- *ICPC* 20 Defined Limit of Benefit Asset, Minimum Funding Requirements and Interaction
- OCPC 07 Evidence in the Disclosure of Financial-Accounting Reports for General Purpose
- OCPC 8 - TECHNICAL GUIDELINES OCPC 08

2013

Starting on January 1st, 2013, Vale adopted the revise pronouncement IAS 19 Benefits to employees. The Company applied the pronouncement retroactively according to the transition provided in the pronouncement, which (i) eliminated the hallway method, (ii) rationalized the changes between assets and liabilities in the plans, acknowledging in the results of the fiscal year the cost of services, interest rate expenses on obligations, interest rate of revenues on the plan s assets, and (iii) acknowledged in the comprehensive results new measurements of actuarial gains and losses, return of plan s assets (net revenue of interest rates on assets) and changes in the ceiling effect of onerous assets and liabilities.

For further details, see explanatory note no. 6 of the accounting statements relative to the fiscal year ended on December 31, 2013.

(I) Pronouncements, interpretations issued by the IASB or updates to subsequently adopt the December 31, 2013

- *Annual Improvements to IFRSs: 2010-2012 Cycle*
- *Defined Benefit Plans: Employee Contributions*
- *Hedge Accounting and amendments to IFRS 9, IFRS 7 and IAS 39*
- *Novation of Derivatives and Continuation of Hedge Accounting*
- *IFRIC 21 Levies*

- *Recoverable Amount Disclosures for Non-Financial Assets*

All of the above pronouncements, interpretations, and updates have correlated CPCs that were issued and approved, or that are in the process of being issued and approved by the CVM, with the same adoption dates.

(II) Pronouncements, interpretation, guidelines and revision approved by the CVM to be adopted after December 31, 2012

There are new pronouncements, interpretations and changes to the IFRS adopted in 2013, as follows. The retrospective impact of the new rules is limited to effects on the revision of CPC 33 (R1) Benefits to employees. For further details, see explanatory note no. 6 of the accounting statements relative to the fiscal year ended on December 31, 2013.

b. Significant effects of changes in accounting practices

There were no significant changes in the accounting practices adopted by the Company between fiscal years that ended on December 31, 2013, 2014, and 2015.

Table of Contents

c. Corrections and remarks in the auditor s opinion

There were no corrections on the opinions drafted by our independent auditors relating to the financial statements for 2013, 2014, and 2015.

There are no paragraphs to emphasize in the financial statements for fiscal years ending on December 31, 2014 and 2015.

As result of a difference between practices adopted in Brazil and those defined through the International Financial Reporting Standards (IFRS), the opinion by independent auditors on the accounting statements ending on December 31, 2013 present the emphasis paragraph as follows:

As described in Note 2, individual financial statements were prepared in accordance with accounting practices adopted in Brazil. In the case of Vale S.A., these practices differ from IFRS, applicable to separate accounting statements, only related to the evaluation of investments in subsidiaries, affiliates, and joint ventures, by the equity method, as in accordance to IFRS, the fair value method should be adopted.

As discussed on Note 6 of the 2013 accounting statements, the Company changed how it pays employee benefits in 2013. Our opinion is not an exception in regards to this topic.

In 2014, KPMG Auditores Independentes assumed as responsible for the independent audit of Company Financial Statements, and issued the report of the financial statements for 2014. Amounts corresponding to the year ended on December 31, 2013, presented for purposes of comparison were previously audited by PricewaterhouseCoopers Auditores Independentes, who issued the report dated February 26, 2014, that present no changes.

Table of Contents

10.5 Critical Accounting Policies

Preparation of financial statements requires the use of certain critical accounting estimates and also the exercise of judgment by the Company s Management in the process of applying the Group s accounting policies.

These estimates are based on the best information available in each fiscal year. Changes in facts and circumstances may lead to revision of estimates, therefore the actual future results may differ from estimates.

Significant estimates and assumptions used by the Company s Management in preparing these financial statements are thus presented:

a) Mineral reserves and useful life of the mines

The estimates of proven and probable reserves are regularly evaluated and updated. These reserves are determined using generally accepted geological estimates. The calculation of reserves requires that the Company assume positions of future conditions that are uncertain, including future ore prices, exchange and inflation rates, mining technology, availability of permits and production costs. Changes in some of these assumptions could have a significant impact on proven reserves and probable reserves recorded.

The estimated volume of mineral reserves is based on calculation of the portion of the mines that is depleted, and the estimated useful life of the mine is a major factor in quantifying the provision of environmental rehabilitation of mines during the write-down of fixed assets. Any change in the estimates of the volume of mine reserves and the useful life of the assets linked to them may have a significant impact on charges for depreciation, depletion and amortization, which are recognized in the financial statements as cost of goods sold. Changes in the estimated useful life of the mines could cause a significant impact on estimates of the provision for environmental costs of recovery after write-down of fixed assets and impairment analysis.

b) Disposal of Assets

The Company recognizes an obligation according to the fair value for disposal of assets during the period in which they occur, pursuant to the Accounting Statement s Explanatory Note 3(b). The Company believes the accounting estimates related to recovery of degraded areas and closure costs of a mine are a critical accounting policy because they involve significant values for the provision and it is expected to involve several assumptions, such as interest rates, inflation,

Table of Contents

the useful life of the asset considering the current stage of depletion and the projected dates of depletion of each mine. These estimates are reviewed each year.

c) Taxation on profit

The Company recognizes the effect of the deferred tax from the tax loss and/or temporary differences in its consolidated financial statements and the financial statements of the controlling company.

Determination of the provision for income taxes or deferred income tax, assets and liabilities, and any provision for losses on tax credits requires estimates from Management. For each future tax credit, the Company assesses the likelihood of part or the entire asset not being recovered. The provision for devaluation depends on the assessment by the Company, the probability of generating taxable income in the future, on production and sales planning, commodity prices, operating costs, restructuring plans, the costs of recovering degraded areas, and planned capital costs.

Table of Contents

d) Provision for legal suits

Provisions for legal suits are only recorded when the possibility of loss is considered to be probable by the legal director and their legal advisers.

Legal suit provisions are recorded when the value of losses can be reasonably estimated. By their nature, legal suits will be resolved when one or more future events occur or fail to occur. The occurrence of such events does not typically depend on the Company s activities, which makes it difficult to give precise estimates about the date on which such events are recorded. Assessing such liabilities, particularly in the uncertain legal environment in Brazil, and well as in other jurisdictions, involves exercising significant estimates and judgments from management regarding the results of future events.

e) Employee Retirement Benefits

The amounts reported in this section depend on a number of factors that are determined based on actuarial calculations that use several assumptions to determine costs and liabilities, among other things. One of the assumptions used in determining the amounts to be recorded in the financial statements is the discount and corrective interest rate. Any changes in these assumptions will affect the accounting records.

At the end of each year, the Company, together with external actuaries, reviews which assumptions should be used for the following year. These assumptions are used to update and discount the fair value of assets and liabilities, costs and expenses, and to determine future values of estimated cash outflows that are necessary to pay pension plan obligations.

f) Reduction in Recoverable Value of Assets

Every year the Company tests the recoverability of its tangible and intangible assets separated by cash-generation unity, usually employing discounted cash flow criteria, which depends on several estimates that are influenced by market conditions prevailing at the time that such recoverability is tested.

Table of Contents

g) Fair Value of Derivatives and Other Financial Instruments

The fair value of financial instruments not traded in an active market is determined by using valuation techniques. The Company uses its judgment to choose the various methods and to define assumptions, which are mainly based on market conditions existing at balance sheet date

The analysis of the impact if actual results vary from Management s estimates is presented in 2015 accounting statement s explanatory note 24 on the topic of Sensitivity Analysis.

Table of Contents

10.6 Significant items Not Included in the Financial Statements

a. Assets and liabilities held by the Company, directly or indirectly, that do not appear on its balance sheet (*off-balance sheet items*)

i. Operational leases, assets and liabilities

Pelleting operations

Vale maintains an operational lease with its entities under common control, Companhia Coreano-Brasileira de Pelotização, Companhia Hispano-Brasileira de Pelotização, Companhia Ítalo-Brasileira de Pelotização, and Companhia Nipo-Brasileira de Pelotização, under which Vale leases its pelleting plants. These operational leases are in effect for 3 and 10 years, and are renewable.

Future minimum payment obligations for operational leases and procurement are as follows, on December 31, 2015:

in R$ million

2016	187
2017	196
2018	206
2019	177
2020 and forward	186
All minimum payments required	**952**

ii. offset portfolio of receivables where the entity maintains risks and responsibilities, including respective liabilities

There is no offset portfolio of receivables where Vale maintains risks and responsibilities, that are not included in the Company balance sheet.

iii. Agreement for future sale and purchase of products or services

There are no agreements for future sale and purchase of products or services that are not included in the Company balance sheet.

Table of Contents

iv. Unfinished construction agreements

There are no unfinished construction agreements that are not included in the Company balance sheet.

v. agreements for futures from financing

(I) Base Metal

Nickel Operations Project New Caledonia

Regarding the construction and installment of our nickel processing plant in New Caledonia, the subsidiary Vale Canada Limited (Vale Canada) offered guarantees for the financing agreements, structured under the terms of the French tax law to BNP Paribas (agent acting on behalf of the tax benefit of certain investors). The guarantees refer to payments related to financing due by the subsidiary Vale Nouvelle-Calédonie SAS (VNC) to an entity controlled by French investors on some assets of the operation. Consistent with the commitments assumed by VNC on the financing, the assets were substantially concluded on December 31, 2012. Vale Canada has also agreed that the assets will be operated for five years. Vale Canada believes that the probability of the guarantees being claimed is remote.

(II) Participating Debentures

Due to the 1997 privatization, the Company issued debentures for existing shareholder, including the Brazilian Government. The terms of the debentures were established to make sure that the pre-privatization shareholders had a share in potential future benefits, which were to be obtained by means of the exploration of certain mineral resources.

A total 388,559,056 debentures were issued in the nominal amount of R$ 0.01 (one cent of a real), whose value will be adjusted based on the Market Price General Index (IGP-M), as defined in the Debenture Deed. On December 31,2015, December 31, 2014, and December 31, 2013, the debentures fair value was R$ 1,336 billion, R$ 4,584 billion, and R$ 4,159 billion, respectively

The owners of these debentures have the right to receive premiums payable every six months, equivalent to a percentage of the net revenues from certain mineral resources, as per the Debenture Deed. In 2015 and 2014, the Company paid to debenture holders compensation in the total amount of R$ 207 million and R$ 285 million, respectively.

(III) Guarantee granted to affiliates

On December 31, 2015, the total of guarantees granted by Vale (limited to its indirect or direct share) for Norte Energia S.A. and Companhia Siderúrgica do Pecém S.A. summed R$ 1.1 billion and R$ 4.6 billion, respectively. With the conclusion of the operation of power generation assets (explanation note 5 in the Financial Statement), the guarantee of Norte Energia S.A. was shared with Cemig GT.

Table of Contents

b. other items not evident in the financial statements

(II). Concessions and Sub-Concession Agreements

Railway transportation companies

The Company entered into concession contracts with the Federal Government, through the Ministry of Transport, for exploration and development of public railway transport of cargo and passengers, under supervision of the National Agency of Ground Transportation (ANTT). The accounting records of concessions are classified as intangible assets.

Termination of the concession for the railways Vitória-Minas and Carajás are June 2027. The contractual bases and expiration dates of the railway transport did not change during the period.

The concession will be terminated in case of end of the contractual period, expropriation, forfeiture, termination of period, cancellation, bankruptcy or closure of the Concessionary.

Table of Contents

Port Terminals

Vale owns specialized port terminals, as follows:

Terminal de Tubarão	Vale S.A.	Vitória/ES	2039
Terminal de Praia Mole	Vale S.A.	Vitória/ES	2039
Terminal Marítimo de Ponta da Madeira	Vale S.A.	São Luís/MA	2039
Terminal da Ilha Guaíba	Vale S.A.	Mangaratiba/RJ	2039
Terminal de Exportação de Minério	CPBS - Companhia Portuária Baía de Sepetiba	Itaguaí/RJ	2021
Terminal de Gregório Curvo	MCR - Mineração Corumbaense Reunida S.A.	Corumbá/MS	2039

Except for Terminal de Exportação de Minério granted to CPBS Companhia Portuária Baía de Sepetiba, the Adherence Agreements applicable to other port terminals were adapted to the new port law, Law 12.815/2013, and new Agreements were executed in September 2014, for 25 years, renewable for equal periods.

There are no other items not shown in Vale s financial statements other than those previously reported.

Table of Contents

10.7 - Comments on items not shown in the Financial Statements

(a) how these items alter or may alter revenue, expenses, operating income, financial expenses or other items in the issuer financial statements

Vale s Directors do not expect relevant effects on the operations described in item 10.8 of this Reference Form and not recorded in the financial statements that would change the revenues, expenses, operating result, financial expenses or other items in Vale s financial information.

(b) nature and purpose of the operation

For a description of the nature and purpose of each operation, see item 10.8 in this Reference Form.

(c) nature and amount of obligations and rights in favor of the issuer arising out of the operation

For a description of the amount of the obligations assumed and rights generated on behalf of Vale as a result of operations not shown in our financial statements, please refer to item 10.6 of this Reference Form.

Table of Contents

10.10 Company Business Plan

a. Investments, including: (i) quantitative and qualitative description of ongoing and planned investments; (ii) sources of investment financing; and (iii) relevant ongoing and planned divestments.

b. Already-disclosed acquisition of plant, equipment, patents or other assets that should materially affect Vale s production capacity

c. New products and services, including: (i) description of ongoing research already published; (ii) the total amounts spent by the issuer on research to develop new products or services; (iii) ongoing projects already announced; and (iv) the total amounts spent by the issuer to develop new products or services

NOTE: To convert the amounts of investments made, the average exchange rates in the periods were used for conversion.

In 2015, Vale investments (execution of projects and maintenance of operations) totaled R$ 28,047 billion. The investment for project execution was R$ 18,524 billion while for maintenance of existing operations was R$ 9,.524 billion. Investments on corporate social responsibility totaled R$ 2,673 million, comprised by R$ 1,764 million in environmental protection and R$ 909 million in social projects.

In 2014, Vale investments (projects execution and operation maintenance) were R$ 28.207 billion. A total of R$ 18.649 billion were invested on project executions and R$ 9.558 billion on the maintenance of existing operations. Investments on corporate social responsibility summed R$ 2.693 billion, where R$ 2.050 billion are destined to environmental protection, and R$ 0.643 billion to social projects. Investments on acquisitions totaled R$ 162 million in 2014.

Starting in 2013, expenses with Research and Development (R&D) were not included in the investments amount, which, in turn, include project execution and maintenance of existing operations, and are based in disbursements.

In 2013, Vale s investments (project execution and maintenance of existing operations) cost R$ 30.750 billion. R$ 20.845 billion were invested in project execution and R$ 9.906 billion in the maintenance of existing operations. Investments in corporate social responsibility reached R$ 2.776 billion, R$ 2.194 billion of which were dedicated to environmental protection and R$ 572 million to social projects.

Acquisition investments summed up to R$ 579 million in 2013. The main acquisitions are discussed in item 10.3 of this Reference Form.

In 2015, Vale started operation in three projects: Conceição Itabiritos II, Cauê Itabiritos and Nacala Port.

Table of Contents

In 2014, Vale started operations in eight projects: the 5th line in Brucutu, Tubarão VIII, Teluk Rubiah, Salobo II, Serra Leste, Vargem Grande, Long Harbour, and Nacala.

In 2013, Vale started operations in five projects: (i) Conceição Itabiritos, an iron ore processing plant in Minas Gerais; (ii) Planta 2, a dry processing plant previously known as *Adicional* 40 Mtpa, in Pará; (iii) CLN 150, a logistic corridor in Brazil s Northern System (including Pier IV with its first cradle in Ponta Madeira), (iv) Long Harbour, a nickel and copper hydrometallurgical refinery in Canada, and (v) Totten, nickel and copper mine in Canada.

In 2012, Vale started operations in two projects (a) Salobo I, a copper and gold operation in Pará, and (b) Lubambe, a copper operation located in Africa s copper belt, in Zambia.

Table of Contents

2016 Capital Budget

In December 2015, the Board of Directors approved the budget for investments in 2016, totaling US$ 6,167 billion (equivalent to R$ 23,434 billion) including disbursements of US$ 3,172 billion (equivalent to R$ 12,053 billion) for projects and US$ 2,995 billion (equivalent to R$ 11,381 billion) dedicated to maintenance of existing operations and replacement projects.

In February 2016, the Board of Directors approved a contingency plan for 2016 in order to reduce, among others, investments to US$ 5,561 billion (equivalent to R$ 21,132 billion), comprised by US$ 3,130 billion (equivalent to R$ 11,894 billion) for project execution and US$ 2,431 billion (equivalent to R$ 9,238 billion) to support existing operations and replacement projects.

Our main iron ore growth initiatives respond for 72% of the US$ 3,172 billion budget for project development in 2015. These programs include: (i) expansion of our integrated iron ore operations in Carajás (US$ 2,293 billion) through S11D and CLN S11D projects.

The following table shows the estimated allocation of investments for the maintenance of existing operations:

INVESTMENTS TO MAINTAIN OPERATIONS 2016 ALLOCATION BY BUSINESS AREA

US$ million	Operations	Piles and Rejection Barriers	Health and Safety	Corporate Social Responsibility	Administrative and Others	Total
Ferrous materials	677	137	179	41	75	1,110
Base metals	747	36	112	404	13	1,313
Coal	106	3	9	13	7	138
Fertilizers	154	18	16	38	15	241
Others	1			0	1	2
Total	1,685	194	317	496	112	2,803

(1) *Includes the Clean era project.*

The following table shows the main projects under development by Vale and/or by companies in the group:

Table of Contents

Project	Estimated Start-up Date	Investment Made 2013	Investment Made 2014	Expected Investment R$ millions 2015	Expected Investment R$ millions 2016	Total	Status(1)
IRON ORE							
Project CLN S11 D Increase logistic capacity of Northern System to support mine S11D, including duplicating approximately 570 km of railroad, building 101 km of a new railroad branch, purchase of cars and locomotives and onshore and offshore expansion at the Ponta da Madeira Maritime terminal Increase nominal logistic capacity on the Carajás Railroad to approximately 230 Mtpa.	1S14 a 2S18	1,504	3,671	3,883	5,214	22,973	Civil works for the foundations to grow the port underway placement of beams on the North *off shore* area (99% concluded). Duplication of the railway achieved 41% physical advance. Railway branch achieved 81% of physical advance. 57% physical advance
Carajás Serra Sul S11D Development of mine and processing plant. Location in the southern mountains of Carajás, Pará. Estimated nominal capacity of 90 Mtpa.	2S16	1,767	291	6,056	3,498	17,810	Delivery of mine and plan electrical centers underway. Transmission line connecting Carajás to Canãa is powered. 80% physical advance.
COAL MINING AND LOGISTICS							
Moatize II	2S15	827	1,342	1,863	399	5,340	Electromechanic assembly achieved 99% physical advance. Commissioning of belts began. Tests in CHPP lines began 99% physical advance.
CSP(2) Development of a steel sheet plant in partnership with Dongkuk e Posco, located in Ceará. Vale holds	2S15	816	428		714	3,101	Assembly of metallic structures achieved 97% physical advance.

50% of the joint venture.	Civil works achieved 99% physical advance

Table of Contents

Estimated nominal capacity of 3.0 Mtpa	97% physical advance.

(1) Expected investment is related to Vale s stake in the project.

(2) Status on December 31, 2015

10.11 - Other factors with relevant influence on the operating performance that have not been identified or commented on other items in this section.

There are no facts occurred in the last three fiscal years with relevant influence on the operational performance other than those identified and commented in other items in this section.

Table of Contents

11.1 Identification of forecasts

Vale provides no quantitative projections about its future financial performance (earnings guidance), as provided in Article 20 of Securities and Exchange Commission (CVM) Instruction #. 480, from December 7, 2009, as amended.

a. Object of projections

Not applicable.

b. Term under consideration and the validity of forecasts

Not applicable.

c. Premises of projections, with an indication of those which can be influenced by the administration of the Company

Not applicable.

d. Values of indicators that are the object of projections for the last 3 fiscal years

Not applicable.

11.2 Follow-up and changes to disclosed projections:

a. identify which are being replaced by new projections included in the form and which ones are being repeated in the form

Not applicable.

b. regarding projection periods already elapsed, compare the data projected with the effective performance of the indicators, indicating clearly the reasons that led to deviations in the projections

Not applicable.

c. regarding projections for periods still ongoing, to make known if projections are still valid on the date of submission of the form, and, when applicable, explain why they have been abandoned or replaced

Not applicable.

12.1 - Description of Administrative Structure

a. Attributions of each body and committee, pointing out whether they have their own regulations.

Board of Directors:

The Board of Directors of Vale is comprised of 11 members and their respective deputies, with unified term of two years, and subject to reelection. Under Vale By-Laws, the Chairman of the Board of Directors and Managing Director positions cannot be held by one single individual. Also under the terms of the Bylaws, the Board of Directors has the powers contemplated in law:

I. Electing, evaluating, and removing Vale s Executive Directors, and determining their attributions

II. Distributing the compensation set by the general meeting among its members and the Executive Board;

III. Attributing to an Executive Director the role of Investors Relations;

IV. Approving policies of selection, evaluation, development, and compensation of the members of the

Executive Board;

Table of Contents

V. Setting the general direction on the businesses of Vale, its fully-owned subsidiaries and controlled companies;

VI. Approving Vale s general Human Resource policies proposed by the Executive Board;

VII. Approving strategic guidelines and the strategic plan of Vale proposed annually by the Executive Board;

VIII. Approving Vale s annual and multi-annual budgets proposed by the Executive Board;

IX. Monitoring and evaluating the financial and economic performance of Vale, being entitled to request reports from the Executive Board with specific performance indicators;

X. Approving investment and/or development opportunities proposed by the Executive Board that exceed the limits established for the Executive Board as defined by the Board of Directors;

XI. Issuing opinions on merger, split-off, or incorporation decisions of which Vale is a party, as well as share purchases, proposed by the Executive Board;

XII. In accordance with the corporate purpose of Vale, making decisions on the setting-up of companies or transformation into a different type of company, direct or indirect participation or withdrawal from other companies, consortia, foundations, and other organizations through exercise of withdrawal rights, exercise or non-exercise of rights of preference in subscription and acquisition, directly or indirectly, of corporate equity or of any other form of participation or withdrawal as prescribed by law, including, but not limited to, merger, split-off, and incorporation of companies in which it participates;

XIII. Approving the corporate risk and financial policies of Vale, proposed by the Executive Board;

XIV. Approving the issuance of simple debentures, not convertible into shares and without collateral, proposed by the Executive Board;

XV. Approving the accounts of the Executive Board, presented in the Annual Management Report, as well as Financial Statements, for later submission for appreciation by the annual general shareholders meeting;

XVI. Approving profit application in the fiscal year, distribution of dividends, and, when necessary, capital budget, proposed by the Executive Board, for later submission for appreciation by the annual general shareholders meeting;

XVII. Appointing and removing external auditors of Vale, by recommendation of the Supervisory Board, according to item (ii) in § 1 in Article 39;

XVIII. Appointing and removing the person responsible for internal auditing and for the Ombudsman of the company, who shall report directly to the Board of Directors;

XIX. Approving policies and the annual internal audit plan of Vale, as well as to acknowledge the respective reports and determine the adoption of any necessary measures;

XX. supervising the management by Executive Directors and examining at any time the books and papers of Vale, requesting information on contracts executed or to be executed, and any other acts, in order to ensure the financial integrity of Vale;

XXI. Approving alterations in corporate governance rules, including without limitation the accountability and information disclosure processes;

XXII. Approving policies on employee conduct based on the ethical and moral standards described in the Code of Ethics and Conduct of Vale, to be complied with by all managers and employees at Vale, its subsidiaries and controlled companies;

XXIII. Approving policies to avoid conflicts of interest between Vale and its shareholders or managers, as well as on the adoption of measures considered necessary in the event such conflicts arise;

XXIV. Approving Vale s policies of institutional responsibility, especially those related to: the environment, work health and safety, and the social responsibility of Vale, proposed by the Executive Board;

XXV. Establishing criteria for the Executive Board for purchase of, financed sale of, or placing liens on, fixed assets and for the constitution of encumbrances, compliant with the terms in article 7 in the By-Laws;

XXVI. Approving the provision of guarantees in general for the Executive Board to obtain loans, and finance, and other contracts,

XXVII. Establishing criteria for the Executive Board for the execution of commitments, non-exercise of rights and transactions of any nature, except waiver of preemptive rights in the subscription and purchase of corporate shares, under the terms in item XII in article 14 in the By-Laws;

XXVIII. Approving any matters, which are not under responsibility of the Executive Board, under the terms in the By-Laws, as well as matters which limitations are outside of the scope of the Executive Board, as provided for in article 14 in the By-Laws;

Table of Contents

XXIX. Approving any reformulations, alterations or amendments to shareholder agreements or consortia contracts or agreements among shareholders or among consortia parties of companies in which the company participates and, moreover, signing of new agreements and/or consortia contracts that address matters of this nature;

XXX. Authorizing the negotiation, signing, or alteration of contracts of any kind or value between Vale and (i) its shareholders, either directly or through intermediary companies, (ii) companies that directly or indirectly participate, in the capital of a controlling shareholder or which are controlled by or are under joint control of entities that participate in the capital of the controlling shareholder and/or (iii) companies in which the controlling shareholder of the Company participates, and the Board of Directors may establish delegations, with standards and procedures that meet the requirements and nature of operations, without prejudice of keeping the aforementioned group duly informed of all company transactions;

XXXI. Comment on any issue to be presented at the annual shareholders meeting;

XXXII. Authorizing the purchase of shares of their own issuance for maintenance in treasury, cancelation or subsequent sale;

XXXIII. Approving or delegating to the Executive Board recommendation of persons who should form part of the administrative, consulting, and financial bodies of those companies and organizations in which Vale participates, either directly or indirectly;

XXXIV. Approving recommendations submitted by the Supervisory Board of the Company in the exercise of its legal and statutory attributions.

The Company s Board of Directors has its own by-laws, which were approved by the Board of Directors on May 25, 2016.

Advisory Committees:

The Board of Directors counts on the assistance, on a permanent basis of five (5) technical and advisory committees, as follows: Executive Development Committee; Strategic Committee; Finance Committee; Accounting Committee, and Governance and Sustainability Committee.

The mission of these committees is to assist the Board of Directors, including the monitoring of Vale activities, in order to provide more effective and higher quality solutions.

The Company s Advisory Committee has its own by-laws, which were approved by the Board of Directors on November 27, 2014. The Strategic Committee Bylaws was amended on June 25, 2015.

Executive Development Committee:

Under terms of Article 21 of the Bylaws, the Executive Development Committee shall be responsible for:

I - Issuing reports on the human resources general policies of the Company submitted by the Executive Board to the Board of Directors;

II - Analyzing and issuing reports to the Board of Directors on the proposal of distribution of the annual global amount reserved for compensation of managers and appropriateness of the remuneration model for members of the Executive Board;

III - Submitting and keeping current the methodology of performance evaluation of the members of the Executive Board; and

IV Helping the Board of Directors to define the goals to evaluate the performance of the Executive Board.

V - Accompanying the development of the succession plan of the Executive Officers.

Strategic Committee:

Under terms of article 22 of the Bylaws, the Strategic Committee is responsible for:

I Recommending Vale s strategic guidelines and strategic plan;

II Recommending investment and/or divestment opportunities;

III Recommending operations relating to merger, split-off, and incorporation of Vale and its subsidiaries.

389

Table of Contents

Finance Committee:

Under terms of article 23 of the Bylaws, the Financial Committee is responsible for:

I - Evaluating the risks and internal financial control systems of the Company;

II Evaluating the compatibility between the shareholders remuneration level and the parameters established in the annual budget and financial planning, as well as their consistency with the general policy on dividends and the capital structure of the company;

III Evaluating Vale s annual budget and the annual investment plan;

IV - Evaluating Vale s annual fund raising and risk exposure limit plan;

V- Evaluating Vale s risk management process;

VI Accompanying the financial performance of capital projects and current budget.

Accounting Committee:

Under terms of article 24 of the Bylaws, the Comptroller s Committee is responsible for:

I - Issuing reports on policies and the Company s annual auditing plan submitted by the employee responsible for internal auditing, and on its execution;

II - Tracking the results of the Company s internal auditing, and identifying, prioritizing, and submitting to the Board of Directors actions to be monitored by the Executive Board;

III Evaluating, upon request by the Board of Directors, the internal audit procedures and performance, regarding best practices;

IV Supporting the Board of Directors, upon request, in the process to choose and evaluate the annual performance of those responsible for Vale s internal audit

Governance and Sustainability Committee:

Under terms of article 25 of the Bylaws, the Committee on Governance and sustainability is responsible for:

I - Evaluating the efficiency of Vale s governance practices and the workings of the Board of Directors, and submitting improvements;

II - Submitting improvements to the Code of Ethics and Behavior and the management system in order to avoid conflicts of interest between the company and its shareholders or managers;

III Evaluating transactions with related parties submitted to analysis of the Board of Directors, as well as issuing reports on potential conflicts of interest involving related parties

IV Evaluating the proposal to change Policies that are not attributed to other committees, the By-Laws and Internal Regulations of Vale s Advisory Committees;

V Analyzing and proposing improvements to Vale s Sustainability Report;

VI Evaluating Vale s performance regarding sustainability aspects and proposing improvements based on a long term strategic view;

VII Supporting the Board of Directors, upon request, in the process to choose and evaluate the annual performance of those responsible for Vale s Ombudsman;

VIII - Supporting the Board of Directors, upon request, in the process to evaluate the Ombudsman while dealing with issues related to Ombudsman and violations against the Code of Ethics and Behavior.

Executive Board:

The Executive Board of Vale is comprised by, at least, 6, and at the most, 11 members, with a term of two years, subject to reelection. Under Vale By-Laws, the Chairman of the Board of Directors and Managing Director positions cannot be held by one single individual. Also, under terms of the Bylaws, the Executive Board has the following responsibilities, in addition to those contemplated in law:

I. Approving the creation and elimination of Executive Departments subordinated to each Executive Director;

II. Preparing and submitting to the Board of Directors the company s general policies on human resources, and executing the approved policies;

Table of Contents

III. Complying and requiring compliance with the general direction of the company businesses as established by the Board of Directors;

IV. Preparing and submitting, annually, to the Board of Directors, Vale s strategic guidelines and the strategic plan, and executing the approved strategic plan;

V. Preparing and submitting Vale s annual and multi-annual budgets to the Board of Directors, and executing the approved budgets;

VI. Planning and conducting Vale s operations and reporting Vale s economic and financial performance to the Board of Directors, and producing reports with specific performance indicators;

VII. identifying, evaluating and submitting investment and/or divestiture opportunities to the Board of Directors which exceed the limits of the Executive Board as defined by the Board of Directors, and executing the approved investments and/or divestitures;

VIII. Identifying, evaluating and submitting to the Board of Directors operations relating to merger, split-off, incorporation in which Vale is a party, as well as share purchases, and conducting the approved mergers, split-offs, incorporations and purchases;

IX. Preparing and submitting Vale s finance policies to the Board of Directors, and executing the approved policies;

X. Submitting to the Board of Directors the issuance of simple debentures, not convertible into shares and without collateral;

XI. Defining and submitting to the Board of Directors, upon preparation, the company s balance sheet, profit distribution, dividend distribution, and, if needed, capital budget;

XII. Preparing, at each fiscal year, the Annual Management Report and Financial Statements to be submitted to the Board of Directors and, later, to the general shareholders meeting

XIII. Adhering to and encouraging adhesion to Vale s Code of Ethics and Conduct, established by the Board of Directors;

XIV. Preparing and submitting to the Board of Directors Vale s policies on corporate responsibility, such as the environment, health, safety and social responsibility, and implementing the approved policies;

XV. Authorizing the purchase of, sale of and placing of liens on fixed and non-fixed assets including securities, contracting of services, whether the company is the provider or receiver of such services, being empowered to establish standards and delegate powers, all in accordance with the criteria and standards established by the Board of Directors;

XVI. Authorizing the signing of agreements, contracts and settlements that constitute liabilities, obligations or commitments on the Company, being empowered to establish standards and delegate powers, all in accordance with the criteria and standards established by the Board of Directors;

XVII. Proposing to the Board of Directors any reformulations, alterations, or amendments of shareholders agreements or of agreements among the shareholders of companies in which Vale participates, as well as suggesting the signing of new agreements and consortia contracts that address subjects of this nature;

XVIII. Authorizing the opening and closing of branch offices, subsidiary branch offices, depots, agencies, warehouses, representative office or any other type of establishment in this country [Brazil] or abroad;

XIX. Authorizing the signing of commitments, waiver of rights, and transactions of any nature, except in regard to the waiver of preemptory rights in subscription and purchase, under the terms in item XII above in matters related to the Board of Directors, and may establish rules and delegate powers, all within the limits of the Executive Board as established by the Board of Directors;

XX. Informing the Board of Directors of the limits of the individual responsibility of Executive Directors, within the limits of the Executive Board as established by the Board of Directors;

XXI. Establishing, based on the limitations determined by the Board of Directors to the Executive Board, the

limitations along the hierarchic line of Vale s management organization

Laying down voting guidelines to be followed at the General Assemblies or their equivalent by its representatives in the companies, foundations and other organizations in which Vale participates, directly or indirectly, respecting the investment opportunities the , and guidelines approved by the Board of Directors, as well as the respective budget and all within its respective limits in regard to, among other things, indebtedness, the sale of or placing of liens on assets, the waiver of rights, and the increase or reduction of corporate equity;

XXIII. Complying and requiring compliance with the general direction of the company as determined by the Board of Directors; and

XXIV. Appointing, for approval by the Board of Directors, the people to be members at management, Consulting, and fiscal boards of the companies and entities where Vale holds interest, including indirect interest

Table of Contents

The Company s Executive Board has its own by-laws, which were approved on December 9, 2013.

Non-Statutory Committees:

The Executive Board shall have, for advice on a permanent basis, 3 (three) technical and advisory committees, denominated as follows: Disclosure Committee, Risk Management Executive Committee, and Ethics Committee.

The Ethics Committee and the Risk Management Executive Committee have their own by-laws. The Disclosure Committee, on the other hand, does not. Its activities are described in the Disclosure Policy approved by the Board of Directors on May 24, 2012.

Disclosure Committee:

The primary attributes of the Disclosure Committee are (a) the evaluation of the relevance of acts or events that have occurred and are related to the business of Vale; and (b) the oversight of the disclosure of information to the capital markets pursuant to the terms of the Disclosure Policy. For more information on the Disclosure Committee see item 21.1.

Risk Management Executive Committee:

The primary responsibilities of the Risk Management Executive Committee are issuing an opinion on Vale s principles and instruments of risk management; and periodic reporting to the Executive Board on (a) the primary risks to which Vale is exposed (by type of risk and/or business) and the impact of these risks on the asset portfolio and cash flow; (b) how the risks are being monitored and managed, and (c) the impact on the profile of risk of the asset portfolio and on cash flow resulting from the inclusion of new investments and/or projects in the business plan, and, if necessary, what strategies of risk mitigation are recommended. The Risk Management Executive Committee reports regularly to the Executive Board, and the latter is responsible for evaluating and approving strategies for risk mitigation over the long term, as recommended by the Risk Management Committee.

Ethics Committee

The main tasks of the Ethics Committee are: (i) to promote Company values through discussion, evaluation, and the proposal of actions related to: (a) non-compliance with the applicable law; (b) breach of the Code of Ethics and Conduct; and (c) unethical actions or actions that infringe the Company s internal regulations (standards, policies, codes); (ii) assist the Office of the Ombudsman in the establishment of performance indicators that will allow for the assessment Board s work; (iii) assist the Office of the Ombudsman is making use of a database containing the history of previous cases, classified as per type of complaint, severity and scope; (iv) discuss issues related to different action plans to address complaints of a similar nature,

seeking, whenever possible, take consistent actions based on the catalogued history; (v) discuss training programs/actions on ethics and conduct to promote awareness of all Company employees, including outsourced employees; (vi) assist in the clarification of search situations that are not in the Code of Ethics and Conduct, when the Ombudsman Board fails to solve them. It should be noted that cases involving the Ombudsman Officer must be sent to the Board of Directors by any member of the Committee. The Ethics Committee reports regularly to Vale s Ombudsman Office, which is responsible for the continuous improvement of ethical awareness of values such as Do the right thing in all company units worldwide, and it answers to Vale s Board of Directors. The Ethics Committee is made up of the Audit, Human Resources, Ombudsman and General Consultant Officers.

Supervisory Board:

The Supervisory Board is comprised by at least 3 and at the most 5 permanent members and the same number of deputy members. The Supervisory Board shall be responsible for exercising the functions attributed to it by the applicable prevailing legislation, in Vale By-Laws, and as regulated by its own Internal Rules to be approved by its members.

The Supervisory Board, additionally to attributions set forth in Law 6404/76, is responsible to:

Table of Contents

I. Identify critical accounting aspects and analyze appropriate application of generally accepted accounting principles ;

II - monitor the integrity of the financial statements, the annual report, the semestral and quarterly reports of the Company, reviewing financial content decisions in such documents and debating them with the Management and the External Auditor;

III - maintain the communication between the Supervisory Board and the External Audit, under applicable regulation (*Rule 10A-3* by SEC and PCAOB AS 16);

IV - comment on the equity and reasonability of operations to alter capital stock, issuance of debentures, or subscription bonus, investment plans or capital budgets, dividend distribution, transformation, incorporation, merger or split, responsibility of the Shareholders Meeting, as well as eventual conflicts of interest between the controlling shareholder and minor shareholders of the Company, related to such operations;

V - request to Company Management, books, documents, or information needed to perform its inspection activities;

VI - recommend to the Board of Directors the choice, compensation and removal of the Company s External Auditor;

VII - supervise and evaluate annually the works presented by the External Auditor and, if deemed to be necessary, recommend to the Management the eventual withholding of the compensation and/or removal of the External Auditor;

VIII - evaluate and monitor the independence and objectiveness of the External Auditor, debating the audit plan, including the nature of the work, the scope, the audit risks, its effectiveness in line with the applicable regulation, and disclosure obligations prior to the service provision;

IX - deliberate with the External Audit the acquisition of services unrelated to the audit of financial statements, being entitled to pre-approve a list of services that could be provided by the Auditor, to be periodically reviewed;

X - be aware of Internal Audit reports, by the External Auditor and the Controlling Committee, analyzing recommendations and opinions and inviting them to attend, if needed, meetings of the Supervisory Board;

XI - ensure coordination between the Internal Audit and the External Auditor, ensure that the Internal Audit has sufficient resources to perform its functions, review and monitor its effectiveness and that it is in an appropriate position within the Company functional structure;

XII - evaluate the report issued by the External Auditor, with material questions addressed to the Management, regarding accounting records, financial statements, internal control systems applicable to Vale and its subsidiaries and affiliates, accompanied by the respective comments and responses by the Management;

XIII. Mediate eventual disputes between Management and the External Auditor regarding the financial statements of the Company, and guarantee that the Board of Directors promptly receives relevant information on questions in the report on internal controls by the External Auditor;

XIV - evaluate financial controls, internal controls and the Company risk management system, in order to ensure effectiveness and appropriateness as well as funds spent, qualification, and experience of the responsible parties and their training programs;

XV - discuss with the External Auditor, Internal Audit, Controlling Committee, and the Financial Executive Directors, the result of the evaluation of the internal control systems as a whole, aiming its improvement and certifying that recommendations made and not questioned by Executive Directors will be deployed within the appropriate terms;

XVII - Evaluate the effectiveness of procedures adopted by the Company to receive, process and deal with claims related to accounting matters, internal accounting controls, and auditing matters, that should guarantee the confidentiality and unknown identity of the claimant, compliant with applicable laws;

XVIII prepare the annual budget, including, especially, services provided by external assistants (lawyers, consultants, analysts, and others) for purposes of helping it to achieve its purpose , being entitled to approve the payment to these assistants and any administrative expenses needed for performance of their functions, always compliant with the budget;

XIX engage in the attributions applicable to its supervision position during Company liquidation, according to applicable laws; and

XX engage in any other attributions or duties, competence of independent members of the Board, under the terms in the Trading Regulation, according to exemptions granted by the Hong Kong Stock Exchange (HKSE) to the Company.

Table of Contents

The Supervisory Committee has its own by-laws, whose review was approved on September 29, 2014.

Internal Audit:

The main role of Vale s Internal Audit area is to support the management and the Company as a whole is to improve its internal controls, in order to allow that eventual deficiencies found are solved effectively and timely. The main mechanism used for evaluation purposes by the Internal Audit are the goals and procedures established in the Annual Audit Plan (Plan), approved by the Board of Directors of Vale, evaluating compliance with it by other areas of Vale. The Plan, in turn, is the schedule of audit examinations, as well as budget and resources needed to perform such evaluation. It is based on a methodology focused on risk, including the history of works done, information included by the Management and the Board of Directors. The non-statutory director of Internal Audit should review and adjust the Plan, accordingly, in response to changes in Vale businesses and considering eventual risks, operations, systems, and controls. Any significant deviation from the approved Plan must be notified to the Board of Directors, by the Controlling Committee.

The Internal Audit area was created by the end of the 1960s and is currently directly subordinated to the Board of Directors, and the Controlling Committee, also subordinated to the Board of Directors, accompanies the performance of the Internal Audit.

The Internal Audit department has its own by-laws, which was approved on December 10, 2015 by the Board of Directors.

b. Date of formation of the Supervisory Board, if it is not permanent, and of the formation of the committees.

The Supervisory Board has been a permanently functioning body since September 25, 1997.

The five Advisory Committees were formed by the Board of Directors on December 19, 2001, and pursuant to resolutions of the Special Shareholders Meeting held on December 27, 2002, upon which date their existence became part of the Bylaws.

The Disclosure Committee and the Risk Management Committee were formed upon deliberations by the Board of Directors on June 19, 2002 and December 12, 2005, respectively, and the Ethics Committee was created in 2014.

c. Mechanisms for evaluating the performance of each body or committee as well as the performance of its members, with identification of method applied.

Pursuant to Chapter VI of the Internal Regulations of the Supervisory Board and provisions of the Sarbanes-Oxley Law, the Supervisory Board evaluates its own performance annually at the end of each audit cycle. The self-evaluation process considers the following: matters covered in monthly meetings, financial Statements, risk management, and internal controls, management and internal audit responsibility, relationship with external auditors, resources and special research, formation of the Supervisory Board, and training and professional development of members. Only the independent auditors of Vale shall have knowledge of the self-evaluation conducted by the members of the Supervisory Board.

As of December 31, 2015, Vale did not have in place mechanisms of formal evaluation of the performance of its Board of Directors, of its Supervisory Committees, or of their members.

On December 31, 2015, Vale did not have mechanisms to formally assess the Company s Executive Board. Members of the Executive Board, on the other hand, are assessed annually based on their performance and based on objective and measurable goals derived from strategic planning and from the annual budget approved by the Board of Directors. These goals are based on Vale s performance and performance indicators such as EBITDA and Free Cash Flow are used to measure them, in addition to general productivity and sustainability indicators. The budget and

Table of Contents

performance management departments are in charge of monitoring the goals. The final results must be formally validated by Vale s Board of Directors.

d. On Executive Officers, their responsibilities and individual powers

Chief Executive Officer:

Under terms of article 33 of the Bylaws, the Chief Executive Officer has the following responsibilities:

I. Presiding over meetings of the Executive Board;

II. Exercising executive direction of the Company, with powers to coordinate and supervise the activities of the other Executive Officers, exerting his best efforts to ensure faithful compliance with the decisions and guidelines laid down by the Board of Directors and the General Meeting;

III. Coordinating and supervising the activities of the business areas and units that are directly subordinated to him;

IV. Selecting and submitting to the Board of Directors the names of candidates for Executive Officer posts to be elected by the Board of Directors, as well as to propose their respective removal;

V. Coordinating and processing the decision-making of the Executive Board in order to prioritize consensual decision among its members. If consensus is not achieved, the Chief Executive Officer may (i) withdraw the subject in debate; (ii) articulate the position of the majority, including making use of the deciding vote or (iii) in the interest of the Company and through well-based reasoning, decide individually on matters of joint deliberation; in this case he must report to the Board of Directors on the use of this prerogative at the first meeting of the Board of Directors that occurs after the corresponding decision. Decisions related to annual and multi-annual budgets and the Strategic Plan and the Annual Report on Administration of Vale shall be taken by a majority of votes, when considering all of the Executive Officers, so long as the favorable vote of the Chief Executive Officer is among the m;

VI. Indicating who among the Executive Officers shall replace an Executive Officer in case of a temporary impairment or absence;

VII. Keeping the Board of Directors informed about the activities of Vale;

VIII. Preparing the annual report and drawing up the balance sheet together with the other Executive Officers.

Executive Officers:

Under terms of article 34 of the Bylaws, the Executive Officers have the following responsibilities:

I Performing the services for which they are responsible;

II Participating in meetings of the Executive Board, contributing to the definition of the policies to be followed by the company reporting on matters of the respective areas of responsibility;

III Complying with and ensuring compliance with the policy and general direction of the company s business established by the Board of Directors, each being responsible for his specific area of activities; and

IV Contracting the services of attorneys, consultants, analysts, and other resources necessary for performance of the functions of the Supervisory Board, within budget, as well as contracting experts under terms of article 163 §8 of Law 6,404/76.

In addition to this, under terms of article 28 of the Bylaws and within the limits established for each Executive Officer, decisions on matters affecting the specific area of responsibility of each one shall be made by him alone, so long as the matter does not affect the area of responsibility of another Executive Officer, or in conjunction with the Chief Executive Officer in matters or situations pre-established by the latter.

Table of Contents

12.2 Description of the rules, policies, and practices relating to General Assemblies

a. Notification Periods

Vale customarily calls for the General Shareholders Meetings by sending out a notice of call for general meeting , at least (i) 30 days before the meeting, the first call, pursuant to Article 8 of CVM Instruction # 559 , from March 27, 2015 and, (ii) 15 days prior to the meeting s date, second call, in accordance with the recommendations of the CVM and commitments assumed before the Hong Kong Stock Market.

In addition, pursuant to article 8, §2 of Vale s Bylaws, a holder of special class preferred shares (Golden Shares) shall be called formally by the company, by means of personal correspondence directed to his legal representative at least fifteen (15) days in advance, for the purpose of considering any matter subject to the right of veto specified in Article 7 of the Bylaws and in item 18 of this Reference Form.

b. Powers

Vale s General Shareholders Meeting has powers pursuant to Law 6.404/76, and the General Shareholders Meeting shall be responsible to:

I amend the bylaws;

II elect or dismiss, at any time, members of the Company Board of Directors and Supervisory Board, provided that the Board of Directors is entitled to elect and dismiss Company directors and determine their attributions;

III annually receive accounts from manager and deliberate on financial Statements;

IV global compensation for Company s managers and members of the Supervisory Board

V - authorize the issuance of debentures, provided that the Board of Directors may authorize the issuance of debentures in specific cases provided for in Law 6.404/76 and the Company Bylaws;

VI suspend the exercise of shareholders rights;

VII deliberate on the valuation of assets provided by shareholders to comprise the capital stock;

VIII authorize the issuance of beneficiaries;

IX deliberate on the transformation, merger, incorporation and division of the company, its dissolution and liquidation, elect and dismiss liquidating agents and appreciate the accounts; and

X authorize managers to declare bankruptcy and composition with creditors.

c. Addresses (physical or electronic) at which documents relating to the General Meeting shall be available to shareholders for their review

At Vale s headquarters at Avenida das América no. 26, 700, Bloco 8, Loja 318, 3rd floor , Barra da Tijuca, city of Rio de Janeiro, State of Rio de Janeiro, Brazil and at the electronic addresses of Vale (www.vale.com) the Comissão de Valores Mobiliários - CVM (www.cvm.gov.br), BM&FBOVESPA Bolsa de Valores, Mercadorias e Futuros (www.bmfbovespa.com.br); the Securities and Exchange Commission (*www.sec.gov*) and the Hong Kong Stock Market (*www.hkex.com.hk*).

d. Identification and handling of conflicts of interests

According to Vale s Bylaws, the Board of Directors may set policies to avoid conflicts of interest between Vale and its shareholders or its managers, as well as on the adoption of provisions deemed necessary should conflicts of interest arise.

On December 19, 2013, the Board of Directors approved the Policy on Transactions with Related Parties, which sets forth the guidelines and principles to assure that the transfer, onerous or free of charge, of resources, services, or obligations engaging people and/or companies with whom Vale may contract under conditions which are not independent conditions as the ones that characterize transactions with third parties (Related Parties and Transactions with Related Parties , respectively), is conducted within Market standards, compliant with the best corporate governance practices, the appropriate transparency, prioritizing the best interests of Vale, avoiding abuses or misuse of company assets. This policy applies to Vale, its controlled companies, joint ventures and entities where Vale holds significant influence, Vale shareholders, managers, and controlling shareholders, as well as kin to Vale managers and controlling shareholders. For more information on the Policy on Transactions with Related Parties, see item 16.1 in this Reference Form.

Table of Contents

Under terms of the Bylaws and the Policy for Transactions with Related Parties, the Governance and Sustainability Committee may issue reports related to potential conflicts of interest between Vale and its shareholders or managers. The Committee may also evaluate the selection process and conditions of transactions to be considered by the Board of Directors.

Additionally, Vale shareholders or shareholders representatives at General Meetings should comply with the following procedure in case of conflict of interests:

I. The shareholder or shareholder representative must immediately state its particular conflict interest. Should he failed to do so, another person may state such conflict;

II. As soon as the conflict of interest is stated regarding a specific issue, the respective Vale s shareholder or shareholder representative will have access only to documents and information on the matter that is disclosed to the Market, under the terms in the effective legislation, and should be away, even physically, of the discussions at the General Meeting, compliant with his legal duties. The statement of conflict of interests, absence, and temporary reservation should be recorded in the minutes.

If requested by the President, the shareholders or shareholder representatives engaged in a situation of conflict of interests may partially attend the discussion, aiming to provide more information on the Transaction with Related Party object of the discussion. In this case, they should be removed at the final portion of the discussion.

e. Request for power-of-attorney by the directors to exercise voting rights

There are no rules, policies or practices for requesting powers-of-attorney by the directors to exercise voting rights in General Shareholders Meetings.

f. Necessary formalities to accept powers-of-attorney granted for shareholders, indicating whether Vale accepts powers from shareholders electronically

A shareholder who wishes to attend the General Meetings must provide valid photo identification (original or notarized copy) and proof of Vale share ownership issued by the bookkeeping financial institution or custody agent up to 4 (four) business days before the date of the Meeting.

Any shareholder may appoint a proxy, or more than one as the case may be, to attend meetings and vote in his name. If represented by proxy, the shareholder shall comply with the terms of Art. 126, Law No. 6,404/76, and must have been appointed by power-of-attorney no earlier than one year and qualify as a shareholder, Vale manager, attorney who is a Member of the Brazilian Bar Association, or be a financial institution, and it is the role of the investment fund manager to represent the c-owners. If the power-of-attorney is in a foreign language, it should be accompanied by corporate documents in the case of a legal entity, and of a letter of mandate duly translated into Portuguese, and notarized and with a consular stamp.

According to CVM s understanding, under the terms in Circular Order CVM/SEP 002/16, corporate shareholders may be represented at the shareholder assemblies by their legal representatives or by duly established attorneys, pursuant to the company s bylaws and to applicable rules in the Civil Code. The attorney must not necessarily be shareholder of manager of Vale or, be a lawyer. In case of power of attorney in foreign language, this should be accompanied by corporate documents, related to the corporation and the power of attorney duly translated into Portuguese by a sworn translator, consularized and notarized.

For the purposes of facilitating the Assemblies, shareholders represented by proxy may, at their exclusive discretion, deliver the documents within 72 (seventy two) hours prior to the Assemblies.

Vale does not accept powers-of-attorney granted electronically by shareholders.

The validity of the representation documents will be verified prior to the Meeting, thus it is requested that shareholders arrive at the Assemblies earlier to have enough time to verify said documents on time for the meeting.

Table of Contents

g. Maintenance of Internet forums and pages intended to receive and share shareholder comments relating to meetings.

Vale does not keep Internet forums and pages for shareholders to receive and share comments relating to meeting minutes. Despite the above, Vale makes available, following the management proposal related to General and Extraordinary Shareholders Meetings held on April 17, 2015, an email address (rio@vale.com) where shareholders can solve their questions and find additional clarification on matters included in the agenda.

h. Transmission of meetings by live video or audio.

Vale does not transmit meetings by live video or audio.

i. Mechanisms allowing for inclusion of shareholders proposals.

There are no mechanisms allowing for inclusion on the agenda of proposals formulated by shareholders, except for those mechanisms contemplated in applicable law.

Table of Contents

12.3. Board of Director s rules, policies and practices

a. Number of meetings conducted in the past fiscal year, distinguishing between ordinary and extraordinary meetings.

The Board of Directors ordinarily holds meetings once a month, and special meetings whenever called by the Chairman or, in his absence, by the Vice-Chairman or by any other two (2) board members.

Meetings of the Board of Directors are held at the Company headquarters, and may exceptionally be held elsewhere, and attendance may be by means of teleconference, videoconference or other communication means that ensures effective participation and voting authenticity.

In the fiscal year ended on December 31, 2015, the Company held 12 ordinary meetings and three extraordinary meetings.

b. Shareholder provisions establishing voting restrictions on members of the Board of Directors

Vale does not have a shareholders agreement. However, controlling shareholders of Valepar S.A. signed a Private Shareholders Agreement of Valepar S.A. (Shareholders Agreement) to be in effect for 20 years from May 1997, extendable for equal periods of ten years.

The Shareholders Agreement sets forth that the signatories agree upon guiding their representatives at General Meetings and Meetings of the Board of Directors of Vale to vote according to the decisions at Valepar Prior Meeting.

Except for qualified quorum mentioned below, at Prior Meetings matters should be decided by simple majority of votes of the attending Signatories.

According to the Shareholders Agreement, there should be approval by at least 75% of the holders of common shares for adoption of the following:

I. Changes to Vale By-Laws, except when required by law;

II. Increase of Vale s capital stock by the subscription of shares, creation of new stock class, changes to the characteristics of existing stock or capital reduction;

III. Issue of Vale debentures, whether or not convertible into shares, subscription bonuses, stock purchase options or any other security;

IV. Determination of the issuing price of new shares of Vale capital stocks or any other securities;

V. Merger, division, or acquisition operations where Vale acts as party, as well as its transformation;

VI. Request by Vale or respective suspension of liquidation, dissolution, bankruptcy, insolvency, or voluntary acts of financial composition;

VII. Appointment and removal of the Board of Directors and executive Directors of Vale;

VIII. Appointment and removal of the Chairman of the Board of Directors of Vale;

IX. Sale or purchase by Vale of interest in any other company, as well as the purchase of shares issued by Vale to be kept in Treasury;

X. Interest of Vale in holdings or consortium of any kind;

Table of Contents

XI. Execution of distribution, investment, sale, exporting, technology transfer, license of brand, patent exploitation, use concession and/or lease agreements where Vale acts as party;

XII. Approval and change of Vale business plan;

XIII. Determination of the compensation of members of the Board of Directors and Executive Directors, as well as their respective attributions;

XIV. Attribution of profit shares to Vale managers;

XV. Changes to Vale corporate purpose;

XVI. Distribution of dividends in amounts other than provided for in Vale By-Laws or non-distribution, and payment of interest on own capital;

XVII. Appointment and removal of Vale s independent auditor;

XVIII. Creation of encumbrance or liens, including collateral, by Vale, to guarantee third-party obligations, including from its controlled or subsidiary companies;

XIX. Adoption of deliberation on any matter that, according to the law, entitles the shareholder to be removed from Vale upon refund of his shares;

XX. Appointment and removal by Vale Executive Directors of its representatives in controlled or associate companies or in companies where Vale holds the right to appoint the managers; and

XXI. Change to the maximum debt limit and respective debt/shareholders equity ratio, and others.

For further information, see item 15.5 in this Reference Form.

c. Rules on identifying and handling conflicts of interest

which sets forth the guidelines and principles to assure that the transfer, onerous or free of charge, of resources, services, or obligations engaging people and/or companies with whom Vale may contract under conditions which are not independent conditions as the ones that characterize transactions with third parties (Related Parties and Transactions with Related Parties , respectively), is conducted within Market standards, compliant with the best corporate governance practices, the appropriate transparency, prioritizing the best interests of Vale, avoiding abuses or misuse of company assets. This policy applies to Vale, its controlled companies, joint ventures and entities where Vale holds significant influence, Vale shareholders, managers, and controlling shareholders, as well as kin to vale managers and controlling shareholders. For more information on the Policy on Transactions with Related Parties, see item 16.1 in this Reference Form.

Thus, the corporate policy described below to identify and resolve conflicts of interest in meetings of the Board of Directors and the Executive Board, applying Brazilian laws.

I. member of Vale Board of Directors or Executive Directors in conflict of interest must promptly state its particular conflict of interest. Should he failed to do so, another person may state such conflict;

II. as soon as the conflict of interest is stated regarding a specific issue, the member of Vale Board of Directors or Executive Director of Vale will not receive documents or information on the matter and should be away, even physically, compliant with his legal duties. The statement of conflict of interests, absence, and temporary reservation should be recorded in the minutes.

III. in case of Transactions with Related Parties including a signatory shareholder of Valepar Shareholders Agreement and, therefore, member of Vale s controlling body, the member(s) of the Board of Directors appointed by him

Table of Contents

should not receive documents or information on the matter and should be away, even physically, requesting registration in the specific minutes, of the reason for his removal. Such member(s) should return to deliberation to state his vote, compliant with the terms in Valepar Shareholders Agreement, and applicable legal terms;

IV. when requested by the Chairman of the Board of Directors or the President, as the case may be, members of the Board of Directors ort Executive Directors of Vale engaged in a conflict of interest may partially attend the discussion aiming to provide more information on the Transaction with Related Parties in question. In this case, they should be removed from the final portion of the discussion.

Any violation against the terms in the Policy will be deemed as a violation against the Code of Ethics and Conduct and will be subject to procedures and penalties set forth there in. Additionally, the violator will also be subject to punishments set forth in the law, additionally to be responsible for losses and damages caused to Vale or to third parties.

Furthermore, the Code of Ethics and Conduct provides that the members of the Board of Directors and the Advisory Committees, the Supervisory Board, Officers, employees and interns, and controlled companies (provided that they are subject to the laws of the local jurisdiction), are required to defend the interests of Vale in matters in which they are participating and avoid situations in which conflicts of interest with Vale may arise, and when that is not possible, to abstain from representing Vale in the matter in question, immediately disclosing the conflict to his immediate superior.

Violations of the Code of Ethics, rules, and disciplinary standards of Vale subject violators to disciplinary penalties, which may include warning (verbal or formal), suspension, and termination of employment. In applying disciplinary penalties, the nature and seriousness of the infraction shall be considered, noting Vale human resources rules and applicable law.

Table of Contents

12.4 Description of binding clause the for the resolution of conflicts the through arbitration

There are no binding clauses in the Bylaws for the resolution of conflicts by and between shareholders and Vale through arbitration.

Table of Contents

12.5/6 Composition and professional experience of management and Board of Directors:

Name CPF or passport number	Date of Birth Occupation	Management body Elected position	Date of election Date of entry	Term Elected by comptroller % member participation in meetings after coming to position
Other positions held at the company	Independent Member	Criteria applied to determine independence	Number of Consecutive Terms	
Gerd Peter Poppinga	08/29/1959	Member of the Executive Board only	5/21/2015	5/26/2017
604.856.637-91	Geologist	Executive Director of Base Metals and Information Technology	5/21/2015	No
Executive Director of Base Metals and Information Technology of Vale (2011 to 2014), where he also served as Executive Coordinator for Special Projects (1999 to 2000).	NA	NA	3	NA
Luciano Siani Pires	02/10/1970	Member of the Executive Board and of the Disclosure and Risk Management Executive Committees	5/21/2015	5/26/2017
013.907.897-56	Mechanic Engineer	Executive Director of Finance and Investors Relations	5/21/2015	No
He was a permanent member of the Financial Committee (2012 to 2015). He is a permanent member of the Risk Management Committee (since 2012), and he is also a member of the Disclosure Committee of Vale (since 2012). He already acted as (i) Deputy Member of the Board of Directors (2005 to 2007); (ii) Global Director of Strategic Planning (2008 to 2009 and 2011); and (iii) Global Director of Human Resources (2009 to 2011); and (iv) Executive Director of Finance, Supply, Shared Services, and Investors Relations (2012 to 2013).	NA	NA	3	NA
Vania Lucia Chaves Somavilla	02/24/1960	Member of the Executive Board only	5/21/2015	5/26/2017
456.117.426-53	Civil Engineer	Executive Director of Human Resources, Health	5/21/2015	No

Table of Contents

		and Safety, Sustainability, and Power		
Executive Director of Human Resources, Health and Safety, Sustainability, and Power of Vale (since 2011), where she served as Director of Environment and Sustainable Development (2010 to 2011). Started her professional career in Vale in 2001 as General Manager of Planning and Power Trade responsible for the management of the power portfolio and then Director of the Department of Power Trade (2004 to 2010)	NA	NA	3	NA
Murilo Pinto de Oliveira Ferreira	06/22/1953	Member of the Executive Board and to the Strategic and Disclosure Committees	5/21/2015	5/26/2017
212.466.706-82	Business Administrator	10 President/Superintendent	5/23/2015	No
Managing Director of Vale (since 2011), Permanent member of the Strategic Committee and of Information Disclosure Committee of Vale (since 2011). Started his professional career in Vale in 1977, where he served in different positions as Director of the Department of Aluminum (2003 to 2005), Executive Director of Participations and Business Development (2005 to 2006) and Executive Director of Nickel and Base Metals Trade (2007 to 2008).	NA	NA	3	N/A
Jennifer Anne Maki	04/07/1970	Member of the Executive Board only	09/24/2015	5/26/2017
063.119.857-13	Accountant		09/24/2015	No
NA	NA	NA	NA	NA
Humberto Ramos de Freitas	11/01/1953	Member of the Executive Board only	5/21/2015	5/26/2017
222.938.256-04	Metallurgic	Executive Director of Logistics and Mineral Research	5/21/2015	No
Executive Director of Logistics and Mineral Research of Vale (since2011), current name of the Executive Department of Logistic and Mineral Exploration, where he served as (i) Director of Logistic Operations (2009 to 2010); (ii) Director of Ports and Navigation (2008 to 2009); (iii) Director of the Port Operation Department (2007 to 2008); (iv) General Manager of the Manganese Department (1993 to 1997) and (v) General Manager of Porto de Ponta de Madeira (1993 to 1997).	NA	NA	NA	NA

Table of Contents

Galib Abrahão Chaim	08/22/1959	Member of the Executive Board only	5/21/2015	5/26/2017
132.019.646-20	Mining Engineer	Executive Director of Deployment of Capital Projects	5/21/2015	No
Executive Director of Deployment of Capital Projects of Vale (since 2011), where he served as Director of the department of Coal Projects for projects in Australia, Mozambique, Indonesia and Zambia (2005 to 2011) and Country Manager of the Project Department in Mozambique (2005 to 2011).	NA	NA	3	N/A
Roger Allan Downey	04/01/1967	Member of the Executive Board only	5/21/2015	5/26/2017
623.291.626-34	Administrator	Executive Director Fertilizers and Coal and Strategy	5/21/2015	No
Executive Director of Fertilizers and Coal and Strategy of Vale (since 2015), where he served as Executive Director of Fertilizers and Coal of Vale (2012 to 2015), Manager of Strategic Marketing Iron Ore (2002 to 2005). Since 2014, he is also permanent member of the Vale s Risk Management Executive Committee.	N/A	N/A	3	N/A
Alberto Ribeiro Guth	08/01/1959	Member of the Board of Directors only	04/25/2016	Until the 2017 General Ordinary Meeting
759.014.807-59	Engineer	27 - Board of Directors (permanent)	04/25/2016	Yes
N/A	Yes	Determination of independence resulted from (i) he did not have any associations with Vale, except for eventual interest that was not relevant to capital; (ii) he is not a controlling shareholder, nor a shareholder s spouse or second degree relative; (iii) he is not bound to shareholders by any agreement; (iv) he has not an employees or director at Vale or any of its controlled or affiliated companies for at least the past 3 (three)	0	100%

Table of Contents

		years; (v) he isn t, and hasn t been for the past 3 (three) years, a member of a controlled company; (vi) he does not, directly or indirectly, provide, purchase, supply, or negotiate services and/ or products to Vale at a relevant scale; (vii) he is not the spouse or second degree relative of any director or manager at Vale; (viii) he does not receive any other compensation from Vale in addition to his member fee; (ix) he isn t, and has not been for the past 3 (three) years, member of an auditing firm that audits or has audited Vale in this same period; (x) he is not a member of a nonprofit organization that is recipient of significant financial resources from Vale or from its related parties; and (xi) he is not financially dependent on the compensation that he may come to receive from Vale.		
Francisco Ferreira Alexandre	10/29/1962	Member of the Board of Directors	4/17/2015	Until 2017 General Shareholders Meeting
301.479.484-87	Civil Engineer	23 - Board of Directors (deputy)	4/17/2015	Yes
Deputy member of the Board of Directors of Vale (since 2013).	N/A	N/A	2	0%
Fernando Jorge Buso Gomes	06/06/1956	Member of the Board of Directors and of the Governance and Sustainability, Economic Development and Financial Committees	04/17/2015	Until 2017 General Shareholders Meeting

Table of Contents

370.624.177-34	Bank employee	22 - Board of Directors (permanent)	04/17/2015	Yes
Coordinator of the Governance and Sustainability Committee (since 2015), the Executive Development Committee and the Financial Committee (since 2015)	N/A	N/A	0	100%
Yoshitomo Nishimitsu	09/05/1975	Member of the Board of Directors only	04/17/2015	Until 2017 General Shareholders Meeting
060.569.787-61	Geologist	23 - Board of Directors (deputy)	04/17/2015	Yes
N/A	NA	N/A	0	90%
Tarcísio José Massote Godoy	04/05/1964	Member of the Board of Directors only	04/17/2015	Until 2017 General Shareholder s Meeting
316.688.601-04	Public Servant	22 - Board of Directors (permanent)	04/17/2015	Yes
Deputy member of the Supervisory Board of Vale (2003 to 2007)	N/A	N/A	0	100%
Luciano Galvão Coutinho	09/29/1946	Member of the Board of Directors only	04/17/2015	Until 2017 General Shareholder s Meeting
636.831.808-20	Economist	22 - Board of Directors (permanent)	04/17/2015	Yes
Permanent member of the Board of Directors (since 2007) and member of the Strategy Committee (2005 to 2006 and since 2009)	N/A	N/A	5	0%
Gilberto Antonio Vieira	11/12/1955	Member of the Board of Directors only	04/17/2015	Until 2017 General Shareholder s Meeting
221.153.079-68	Bank Employee	23 - Board of Directors (deputy)	04/17/2015	Yes
N/A	N/A	N/A	0	0%
Gueitiro Matsuo Genso	12/12/1971	Member of the Board of Directors only	04/17/2015	Until 2017 General Shareholders Meeting
624.201.519-68	Bank employee	20 Chairman of the Board of Directors	04/17/2015	Yes
Chairman of the Board of Directors (since February 24, 2016), noting that he had already been a member of the Board of Directors since 2015 and member of the Strategic Committee (since 2015).	N/A	N/A	2	90%
Oscar Augusto Camargo Filho	03/09/1938	Member of the Board of Directors	04/17/2015	Until 2017 General Shareholders Meeting
030.754.948-87	Lawyer	22 - Board of Directors (permanent)	04/17/2015	Yes

Table of Contents

Member of the Board of Directors of Vale (since 2003), member of the Strategic Committee (since 2006) and Executive Development Committee (since 2003)	N/A	N/A	7	100%
Moacir Nachbar Junior	04/05/1965	Member of the Board of Directors only	04/17/2015	Until 2017 General Shareholders Meeting
062.947.708-66	Bank Employee	23 - Board of Directors (deputy)	04/17/2015	Yes
Member of the Controlling Committee (since 2015)	NA	NA	0	10%
Victor Guilherme Tito	09/06/1979	Member of the Board of Directors	04/17/2015	Until 2017 General Shareholders Meeting
044.878.356-82	Economist	23 - Board of Directors (deputy)	04/17/2015	Yes
N/A	N/A	N/A	0	70%
Sergio Alexandre Figueiredo Clemente	07/06/1959	Member of the Board of Directors only	04/17/2015	Until 2017 General Shareholders Meeting
373.766.326-20	Bank Employee	21 Vice-Chairman of Board of Directors	04/17/2015	Yes
Member of the Board of Directors of Vale since 2014 and was elected Vice-Chairman in 2015	N/A	N/A	2	80%
Carlos Roberto de Assis Ferreira	01/28/1961	Member of the Board of Directors only	04/17/2015	Until 2017 General Shareholders Meeting
342.680.066-72	Mechanic Maintenance Operator	23 - Board of Directors (deputy)	04/17/2015	No
Employee at Vale since 1979, currently acting as mechanic maintenance operator, currently assigned to Sindicato Metabase de Itabira e Região	N/A	N/A	0	10%
Robson Rocha	03/12/1959	Member of the Board of Directors only	04/17/2015	Until 2017 General Shareholders Meeting
298.270.436-68	Administrator	23 - Board of Directors (deputy)	04/17/2015	Yes
Permanent member of the Board of Directors of Vale (2011 to 2015)	N/A	N/A	0	0%
Lucio Azevedo	12/08/1958	Member of the Board of Directors only	04/17/2015	Until 2017 General Shareholders Meeting
526.635.317-15	Train operator	22 - Board of Directors (permanent)	04/17/2015	No
Employee of Vale since 1985, currently acting as train operator,	N/A	N/A	0	80%

Table of Contents

currently assigned to Sindicato dos Trabalhadores em Empresas Ferroviárias dos Estados do Maranhão, Pará e Tocantins				
Motomu Takahashi	06/12/1953	Member of the Board of Directors only	04/27/2016	Until the next General Shareholders Meeting
Passport no. TR1490020	Economist	22 - Board of Directors (permanent)	04/27/2016	Yes
Member of the Board of Directors of Vale (since 2016)	N/A	N/A	0	0%
Eduardo de Oliveira Rodrigues Filho	08/20/1954	Member of the Board of Directors only	04/17/2015	Until 2017 General Shareholders Meeting
442.810.487-15	Engineer	23 - Board of Directors (deputy)	04/17/2015	Yes
Deputy member of the Board of Directors of Vale (since 2011) and Member of the Financial Committee (since 2011) and member of the Governance and Sustainability Committee (since 2015).	N/A	N/A	3	0%
Luiz Maurício Leuzinger	02/05/1942	Member of the Board of Directors	04/17/2015	Until 2017 General Shareholders Meeting
009.623.687-68	Engineer	23 - Board of Directors (deputy)	04/17/2015	Yes
Deputy member of the Board of Directors of Vale (since 2012), where he also acted in 2003. He also acted as Member of the Financial Committee (2007 to 2015), member of the Executive Development Committee (2012 to 2015), and member of the Governance and Sustainability Committee (2014 to 2015)	N/A	N/A	3	0%
Dan Antonio Marinho Conrado	07/26/1964	Member of the Board of Directors	04/17/2015	Until 2017 General Shareholders Meeting
754.649.427-34	Bank employee	22 - Board of Directors (effective)	04/17/2015	Yes
Permanent member of Vale s Board of Directors (since 2012). He was Chairman of the Board of Directors (from 2012 to February 24, 2016) and has been a permanent member of Vale s Strategic Committee (2012 to February 2016).	N/A	N/A	3	100%
Marcel Juviniano Barros	09/05/1962	Member of the Board of Directors	04/17/2015	Until 2017 General Shareholders Meeting
029.310.198-10	Bank employee	23 - Board of Directors (deputy)	04/17/2015	Yes
Member of the Board of Directors of Vale (since 2012) and member of the Executive Development Committee (since 2013)	N/A	N/A	3	90%

Table of Contents

Paulo José dos Reis Souza	06/02/1962	Supervisory Board	04/25/2016	Until 2017 General Shareholders Meeting
494.424.306-53	Administrator	44 - C.F. (permanent) Elected by Preferred Shareholders	04/26/2016	No
Member of Vale s Supervisory Board (since April 2016)	N/A	N/A	0	0%
Marcelo Amaral Moraes	07/10/1967	Supervisory Board	04/25/2016	Until 2017 General Shareholders Meeting
929.390.077-72	Graduate in Economy	43 - FISCAL BOARD(permanent) Elected by Comptroller	04/26/2016	Yes
Permanent member of the Supervisory Board of Vale since 2004, where he also acted as deputy member of the Board of Directors (May to August 2003)	Yes	The criteria used to determined independence is set forth in section 3.13 of the Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited	13	100%
Aníbal Moreira dos Santos	08/26/1938	Supervisory Board	04/25/2016	Until 2017 General Shareholders Meeting
011.504.567-87	Accounting Technician	43 - FISCAL BOARD(permanent)	04/26/2016	Yes
Permanent member of the Supervisory Board of Vale since 2005, where he also acted as deputy member of the Board of Directors (April to July 2005).	Yes	The criteria used to determined independence is set forth in section 3.13 of the Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited	12	100%
Sandro Kohler Marcondes	04/16/1964	Supervisory Board	04/25/2016	Until 2017 General Shareholders Meeting
485.322.749-00	Bank worker	43 - FISCAL BOARD(permanent for Comptroller)	04/26/2016	Yes
NA	Yes	The criteria used to determined independence is set forth in section 3.13	0	0%

Table of Contents

		of the Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited		
Raphael Manhães Martins	02/08/1983	Supervisory Board	04/25/2016	Until 2017 General Shareholders Meeting
096.952.607-56	Lawyer	45 - FISCAL BOARD(permanent for minor common shares shareholders)	04/26/2016	No
Member of Vale s Supervisory Board (since April 2015)	N/A	N/A	2	100%
Oswaldo Mário Pêgo de Amorim Azevedo	06/23/1941	Supervisory Board	04/25/2016	Until 2017 General Shareholders Meeting
005.065.327-04	Industry and Production Engineer	46 - FISCAL BOARD (deputy) Elected by Comptroller	04/26/2016	Yes
Deputy member of the Supervisory Board (since 2005) and the Controlling Committee (since 2015), where he also acted as permanent member (2204 to 2005)	yes	The criteria used to determined independence is set forth in section 3.13 of the Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited	13	0%
Sergio Mamede Rosa do Nascimento	04/29/1954	Supervisory Board	04/25/2016	Until 2017 General Shareholders Meeting
650.042.058-68	Administrator	43 - C.F.(deputy) Elected by Comptroller	04/26/2016	Yes
N/A	Yes	The criteria used to determined independence is set forth in section 3.13 of	0	0%

Table of Contents

		the Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited		
Julio Sergio de Souza Cardozo	08/18/1944	Supervisory Board	04/25/2016	Until 2017 General Shareholders Meeting
005.985.267/49	Accountant	48 - C. F. (Deputy) Elected by minor common shares shareholders	04/26/2016	No
N/A	Yes	The criteria used to determined independence is set forth in section 3.13 of the Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited	0	0%
Paula Bicudo de Castro Magalhães	05/21/1976	Supervisory Board	04/25/2016	Until 2017 General Shareholders Meeting
787.873.861-00	Economist	47 - C. F. (Deputy) Elected by preferred shares shareholders	04/26/2016	No
Deputy member of Vale s Board of Directors (since April 2016)	Yes	The criteria used to determined independence is set forth in section 3.13 of the Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited	0	0%
Arthur Prado Silva	04/29/1972	Board of Directors	04/25/2016	Until 2017 General Shareholders Meeting
991.897.047-20	Bank employee	23 Board of Directors	04/25/2016	yes

Table of Contents

		(deputy)		
Member of the Governance and Sustainability Committee (since April 2015)	No	N/A	0	0%

Table of Contents

Marcelo Gasparino da Silva	02/13/1971	Board of Directors	05/25/2016	Until 2017 General Shareholders Meeting
807.383.469-34	Attorney	23 Board of Directors (Deputy)	05/25/2016	Yes

Table of Contents

NA	Yes	Determination of independence resulted from (i) he did not have any associations with Vale, except for eventual interest that was not relevant to capital; (ii) he is not a controlling shareholder, nor a shareholder s spouse or second degree relative; (iii) he is not bound to shareholders by any agreement; (iv) he has not an employees or director at Vale or any of its controlled or affiliated companies for at least the past 3 (three) years; (v) he isn t, and hasn t been for the past 3 (three) years, a member of a controlled company; (vi) he does not, directly or indirectly, provide, purchase, supply, or negotiate services and/ or products to Vale at a relevant scale; (vii) he is not the spouse or second degree relative of any director or manager at Vale; (viii) he does not receive any other compensation from Vale in addition to his member fee; (ix) he isn t, and has not been for the past 3 (three) years, member of an auditing firm that audits or has audited Vale in this same period; (x) he is not a member of a	0	0%

Table of Contents

	nonprofit organization that is recipient of significant financial resources from Vale or from its related parties; and (xi) he is not financially dependent on the compensation that he may come to receive from Vale.	

Professional Experience / Disclosure of Convictions / Independence Criteria

Jennifer Anne Maki

-

063.119.857-13

Executive Director of Vale s Base Metals since September 2015. Main professional experience include: (Financial and Management Director of Base Metals at Vale Canada Limited from 2014 to 2015), Vale subsidiary in Canada, where she also acted as (ii) Treasury Vice-President (January to October 2007); (iii) Financial Director (2007 to 2013), and iv) member of the Pension Committee (since 2007), where she was elected as Chairman in 2009; (v) Member of the Commission Board of PT Vale Indonesia Tbk (PTVI) (since 2007), mining company, of the Company s economic group, elected as Chairman in 2014;(vi) Member of the Board of Casa Ronald McDonald of Toronto (since 2013), charity, and (vii) Member of the Board of Directors of Vale New Caledonia, since 2008. Graduate in Trade at the *Queen s University*, in April 1993, and in Accounting at the *Institute of Chartered Accountants*, in Ontario, Canada, in February 1996. Ms. Jennifer Anne Maki represented for all legal purposes that in the last five (5) years, he was not subject to any criminal condemnation, any administrative condemnation by the Comissão de Valores Mobiliários, or any condemnation on final decision, in the judicial or administrative spheres, causing suspension or disqualification for the engagement in any professional or commercial activity.

Luciano Siani Pires

013.907.897-56

Financial and Investor Relations Director. Member of the Vale Risk Management Executive Committee and the Information Disclosure Committee (since 2012). At the Company, he has acted as (i) Deputy Member of the Board of Directors (2005 to 2007), and member of the Financial Committee (2012 to 2015); (ii) Strategic Planning Global Director (2008 to 2009 and 2011); (iii) Human Resources Global Director (2009 to 2011), and (iv) Executive Director of Finance, Supply, Shared Services, and Investor Relations (2012 to 2013). Main professional experience include (i) Permanent Member of the Board of Directors of Valepar S.A. (2007 - 2008), controlling shareholder of Vale, privately-held company acting as holding*;* (ii) Member of the Board of Directors of Telemar Participações S.A. (2005 - 2008), open capital company in the telecommunications sector, internet, and entertainment; (iii) Member of the Board of Directors da Suzano Papel e Celulose S.A. (2005 - 2008), open capital company engaged in the manufacturing of cellulose and other pastes for paper manufacturing. Graduate in Mechanic Engineering at

Pontifícia Universidade Católica do Rio de Janeiro PUC-RJ, in December 1991, and MBA in Finance at Stern School of Business, New York University, in May 2001. Mr. Luciano Siani Pires represented for all legal purposes that in the last five (5) years, she was not subject to any criminal condemnation, any administrative condemnation by the Comissão de Valores Mobiliários, or any condemnation on final decision, in the judicial or administrative spheres, causing suspension or disqualification for the engagement in any professional or commercial activity.

Table of Contents

Vania Lucia Chaves Somavilla

456.117.426-53

She is the Executive Director of Human Resources, Health and Safety, Sustainability and Power of Vale (since 2011), where she also acted as Director of the Environment Department and Sustainable Development (2010 to 2011). She started her professional career at Vale in 2001 as General Manager of Planning and Power Sale in charge of the management of the power portfolio and later she was Director of the Energy Department (2004 to 2010). Main professional experience include: (i) Member of Decision Council of Different Consortia in the Power Sector, including: (a) Consortium Estreito Energia CESTE (2006 to 2010); (b) Consortium Geração Santa Isabel GESAI (2008 to 2010); (c) Consortium of Usina Hidrelétrica de Aimorés (2007 to 2010), companies that are part of the Vale Group; and (d) Brazilian Consortium of Palm Oil Production CBOP of the oil and natural gas (deputy since 2010 to 2012); (ii) Manager of PGT Petroleum Geoscience Technology Ltda. (2008 to 2011), currently Vale Óleo and Gás S.A., company that is part of the Vale Group and that is engaged in exploration and exploitation of mineral reservoir, where she served as (iv) Director-President and Member of the Board (2009 to 2010); (v) Director-President (2009 to 2010) of Vale Energia S.A., a Vale Group company engaged in power activities; (vi) Member of the Board of Albrás Alumínio Brasileiro S.A. (2009 to 2013), a Vale Group company engaged in aluminum production; (vii) deputy member of the Board of Ultrafértil S.A. (2010 to 2011), Vale Group company in the sector of fertilizers and similar products; (vii) Director-President of Vale Florestar S.A. (2010 to 2012), a Vale Group company engaged in forest projects; (viii) Director-President of Instituto Ambiental Vale (2010 to 2014), institute that acts in the preservation, of biodiversity, part of the Vale Group; (ix) Deputy Member of the Board of Administration of Vale Fertilizantes S.A. (2011 to 2013), a Vale Group company in the sector of phosphates; and (x) Director-President of Associação Vale para o Desenvolvimento Sustentável Fundo Vale (2010 to 2014), association engaged in environmental protection, part of the Vale Group; and (xi) Director-President and Member of the Board of Directors at Vale Óleo e Gás S.A. (2009 to 2010), part of the Vale Group. Graduate in Civil Engineering at UFMG, in April 1983; post graduate in Barrage Engineering by Federal University of Ouro Preto, in April 1990; extension course on Management of Hydro Power Utilities by SIDA, Stockholm, in November 1996; MBA in Corporate Finance by IBMEC Business School, Belo Horizonte, in July 1998; and participated in Transformational Leadership Program by MIT in March 2005 and Mastering Leadership Program by IMD in December 2006.
Ms. Vania Somavilla represented for all legal purposes that in the last five (5) years, she was not subject to any criminal condemnation, any administrative condemnation by the Comissão de Valores Mobiliários, or any condemnation on final decision, in the judicial or administrative spheres, causing suspension or disqualification for the engagement in any professional or commercial activity.

Murilo Pinto de Oliveira Ferreira

212.466.706-82

He is the President of Vale (since 2011), Permanent member of the Strategic Committee and Member of the Information Disclosure Committee (since 2011). He started his professional career at Vale in 1977 as a financial and economic analyst, where he held different positions, including Director of the Aluminum Department (2003 to 2005), Executive Director of Equity and Business Development (2005 to 2006) and Executive Director of Nickel and Sale of Base Metals (2007 to 2008). Main professional experience include (i) Chairman of the Board of Petróleo Brasileiro S.A. PETROBRAS, open capital oil company (from May to November 2015); (ii) Chairman of the Board of Directors of Directors of Ferro Gusa Carajás S.A. (2005 to 2006), company in the pig iron sector, incorporated into Vale in 2008; (iii) Managing Director of Vale do Rio Doce Energia S.A., currently Vale Energia S.A., (2005 to 2007), a Vale Group company in the power sector; (iv) Chairman of the Board of Directors of Mineração Rio do Norte S.A. (2006 to 2008), company in the bauxite extraction sector; (v) Member of the Board of Directors of Mineração Onça Puma Ltda. (2007 to 2008), company engaged in nickel mining activities, incorporated into Vale in 2008; (vi) Chairman of the Board of Directors of Valesul Alumínio S.A. (2006 to 2008), a Vale Group company in the aluminum sector; (vii) Director-President of Vale Canada Limited (2007 to 2008), company controlled by Vale in Canada, where he also served as (viii) Member of the Board (2006 to 2007); (ix) Member of the Board of Directors of Vale Canada Holdings (2006 to 2008), holding controlled by Vale in Canada, where he also served as (x) Director and Vice-President of the Executive Committee (2007 to 2008); (xi) Member of the Board of Commissioners of PT Vale Indonesia Tbk (2007 to 2008), company in the mining sector, member of the Vale Group; (xii) Director and Chairman of the Board of Directors of Vale Nouvelle-Calédonie S.A.S. (2007 to 2008), a mining company member of the Vale Group; (xiii) Member of the Board of Directors of Usinas Siderúrgicas de Minas Gerais S.A. - USIMINAS (2006 to 2008), open capital company engaged in the steel industry; (xiv) Member of Managing Council of Associação Instituto Tecnológico ITV (2011 to 2013), association that promotes research aiming the development of research for sustainable technology development; (xv) Partner of Studio Investimentos (2009 to 2011), asset management company focused on the Brazilian stock market. Graduate in Business Administration at Fundação Getúlio Vargas de São Paulo in August 1977, post graduate in Administration and Finance by Fundação Getúlio Vargas do Rio de Janeiro in May 1982, and

Table of Contents

Executive specialization (Senior Executive) by IMD Business School, Lausanne, Switzerland, concluded in December 2007. Mr. Murilo Ferreira represented for all legal purposes that in the last five (5) years, he was not subject to any criminal condemnation, any administrative condemnation by the Comissão de Valores Mobiliários, or any condemnation on final decision, in the judicial or administrative spheres, causing suspension or disqualification for the engagement in any professional or commercial activity.

Gerd Peter Poppinga

604.856.637-91

Chief Executive Officer at Ferrosos da Vale (since November 2014). Main professional experience include: (i) Chief Executive Officer of Base Metals and Information Technology at Vale (from November 2011 to November 2014); (ii) Executive Vice President, Asia-Pacific of Vale Canada (from November 2009 to November 2011) (iii) Executive Vice President, Strategy, Business Development, Human Resources and Sustainability at Vale Canada (from May 2008 to October 2009; and (iv) Director of Strategy and Information Technology at Vale Canada (from November 2007 to April 2008). He was acted, from 2000 to 2007, in several leadership roles in the sales offices at Vale in Switzerland, and from 1985 to 1999 he acted in several position at Mineração Trinidade S.A. SAMITRI, a publicly traded company that was acquired by Vale in 2001. Graduate in Geology at UFRJ in 1980 and Universität Erlangen in 1982, in Germany, post graduate in Applied Geology at Universität Clausthal Zellerfeld in 1984. He also holds the following specializations: Geostatistics at UFOP; concluded at Universidade Federal de Ouro Preto, Negotiation Dynamics by INSEAD, Senior Leadership Program by MIT; Leadership Program by IMD Business School; and Strategic Megatrends with Asia Focus by Kellogg Singapore; as well as Executive MBA by Fundação Dom Cabral. Mr. Gerd Peter Poppinga represented for all legal purposes that in the last five (5) years, he was not subject to any criminal condemnation, any administrative condemnation by the Comissão de Valores Mobiliários, or any condemnation on final decision, in the judicial or administrative spheres, causing suspension or disqualification for the engagement in any professional or commercial activity.

Humberto Ramos de Freitas

222.938.256-04

He is Executive Director of Logistics and Mineral Research at Vale (since 2011), current name of the Executive Director of Logistic and Mineral Exploration, where he also acted as (i) Director of Logistic Operations (2009 to 2010); (ii) Director of Port Operations and Navigation (2007 to 2009) (iii) Director of the Port Operation Department (2007 to 2008); (iv) General Manager of the Manganese Department (1993 to 1997) and (v) General Manager of Porto de Ponta da Madeira (1993 to 1997). Main professional experience include (i) Member of Board of Directors of MRS Logística S.A. (since 2014), a Vale Group company in the cargo transportation segment, and he also acted in this position from 2010 to 2012; (ii) Managing President of Valesul Alumíno S.A. (2003 to 2007), a Vale Group company in the aluminum sector; (iii) General Port Superintendent of Companhia Siderúrgica Nacional (1997 to 1999), open capital company engaged in steel industry. He also served as President of the Decision Council of ABTP - Associação Brasileira de Terminais Portuários (since 2009), non-profit civil association dealing with issues related to port

activities. Graduate in Metallurgy Engineering at Escola de Minas de Ouro Preto in 1976, specialization course for Executives (Senior Executive) at MIT, USA concluded in 2005, and extension courses in (i) Advanced Management Program (PGA) by Fundação Dom Cabral (offered by INSEAD) concluded in 2004; (ii) Partnership for Corporate Development (PDE) by Fundação Dom Cabral concluded in 1996; (iii) Executive Development Program by J.L. Kellogg School of Management, Northwestern University, in the USA (concluded in 1995); (iv) Business Strategic Planning by McKinsey Consulting concluded in 1993; and (v) Management Studies by the Association of Overseas Technical Scholarship, in Japan concluded in 1991. Mr. Humberto Freitas represented for all legal purposes that in the last five (5) years, he was not subject to any criminal condemnation, any administrative condemnation by the Comissão de Valores Mobiliários, or any condemnation on final decision, in the judicial or administrative spheres, causing suspension or disqualification for the engagement in any professional or commercial activity.

Galib Abrahão Chaim

132.019.646-20

He is Executive Director of Capital Project Deployment at Vale (since 2011), where he also acted as Director of the Coal Project Department for projects in Australia, Mozambique, Indonesia and Zambia (2005 to 2011) and Country Manager of the Project Department in Mozambique (2005 to 2011). Main professional experience include (i) Industrial Director of Alunorte Alumina do Norte do Brasil S.A., privately-held company working with alumina production (1994 to 2005); (ii) Industrial Superintendent of Albras Alumínio Brasileiro S.A. works with aluminum production (1984 to 1994); and (iii) Technical Superintendent of Mineração Rio do Norte S.A., privately-held company working in bauxite exploration and sale (1979 to 1984).

Table of Contents

Graduate in Engineering at the Federal University of Minas Gerais (in December 1975) and MBA in Corporate Management at Fundação Getúlio Vargas concluded in 2004. Mr. Abrahão Chaim Galib represented for all legal purposes that in the last five (5) years, he was not subject to any criminal condemnation, any administrative condemnation by the Comissão de Valores Mobiliários, or any condemnation on final decision, in the judicial or administrative spheres, causing suspension or disqualification for the engagement in any professional or commercial activity.

Roger Allan Downey

623.291.626-34

He is the Executive Director of Fertilizers, Coal and Strategy at Vale (since 2015), where he also acted as Executive Director of Fertilizers and Coal of Vale (2012 to 2015), Manager of Strategic Marketing Iron Ore (2002 to 2005). Since 2014, he is also a Member of the Risk Management Executive Committee at Vale. Main professional experience in last five years include: (i) Partner Director of CWH Consultoria Empresarial SC Ltda.(January to April 2012), consulting company; (ii) Deputy Member of the Board of Directors of Valepar S.A. (February to April 2012), controlling shareholder of Vale, privately-held company acting as holding; (iii) Managing President of MMX Mineração e Metálicos S.A. (2009 to 2011), open capital mining company. Graduate in Business Administration at University of Western Australia, in July 2001, and Administration at Australian National Business School/UWA, in July 2002, and MBA by University of Western Australian, in April 2003. Mr. Roger Allan Downey, represented for all legal purposes that in the last five (5) years, he was not subject to any criminal condemnation, any administrative condemnation by the Comissão de Valores Mobiliários, or any condemnation on final decision, in the judicial or administrative spheres, causing suspension or disqualification for the engagement in any professional or commercial activity.

Francisco Ferreira Alexandre

301.479.484-87

Deputy Member of the Board of Directors of Vale (since 2013). Main professional experience in last five years include: (i) Deputy Member of the Board of Directors of Valepar S.A. (since 2013), controlling shareholder of Vale, privately held company acting as holding; (ii) Superintendent Director of BRF Previdência (since 2012), pension fund; (iii) Management Director of PREVI Caixa de Previdência dos Funcionários do Banco do Brasil, (2003 - 2010), pension fund, which holds indirect stake in the Company through Litel Participações S.A., which, in turn, is a shareholder in the control block of Valepar S.A., the Company s controlling shareholder; (iv) Vice-President of the of the Board of Directors of BRF Brasil Foods S.A. (2009 to 2011), animal protein derivative food company; and (v) Member of the Board of Directors of Kepler Weber S.A. (2011 - 2013), company engaged in the production of structures to store and transport agricultural products. Graduate in Law at Centro de Ensino Superior de Alagoas CESMAC in December 1992, and Civil Engineering at Universidade Federal de Alagoas UFAL in March 1994. Post-graduation in Economics and Personnel

Management at PUC São Paulo (concluded in July 2002), MBA in Corporate Finance at IAG Pontifícia Universidade Católica do Rio de Janeiro PUC-RJ (concluded in December 2004) and AMP Advanced Management Program by Harvard Business School in October 2009. Mr. Francisco Ferreira Alexandre represented for all legal purposes that in the last five (5) years, she was not subject to any criminal condemnation, any administrative condemnation by the Comissão de Valores Mobiliários, or any condemnation on final decision, in the judicial or administrative spheres, causing suspension or disqualification for the engagement in any professional or commercial activity.

Alberto Ribeiro Guth

Effective member of Vale s Board of Directors of Vale (since June 2015). His main professional experiences in the last 5 years include: (i) member of the Board of Directors of Via Retail S.A. (since 2012), a publicly-traded retail company; (ii) member of the Board of Directors of Centrais Elétricas de Santa Catarina S.A. CELESC (since 2015), a publicly-traded energy distribution company; (iii) Associate Director of Angra Partners Gestão de Recursos Ltda. (since 2003), a closed resource management and financial advice; company; (iv) member of the Board of Directors of TG Participações S.A. (since 2008), closed ethanol manufacturing company; (v) member of the Board of Directors of Angra Infraestrutura Gestão de Informações Ltda. (since 2006), a closed resource management company; (vi) Member of the Board of Directors of Estre Ambiental S.A. (since 2014), a closed waste treatment company; (vii) member of the Board of Directors of A Geradora Aluguel de Máquinas S.A. (since 2013), a closed equipment leasing company; (viii) Director of Aconcágua

Table of Contents

Investimentos e Participações Ltda. (from 2013), closed company member of the Grupo Angra Partners ; (ix) Associate Director of Angra Partners Participações Ltda. (from 2010 to 2014), closed resource management company; (x) partner and director at Angra Partners Assessoria Financeira Ltda. (from 2010 to 2015), a closed resource management company; (xi) Director of Futuretel S.A., a publicly-traded investment holding company (from 2012); (xii) Director of Zain Participações S.A. (since 2012), a publicly traded investment company; (xiii) Director of Neustift Participações Ltda. (from 2014), a private company member of Grupo Angra Partners; (xiv) member of the Board of Directors of Ediouro Participações S.A. (2013 to 2014), a private publishing and graphics company; (xv) Director of Sul 116 Participações S.A. (since 2012), a publicly traded investment company; (xvi) Director of Newtel Participações S.A. (2012), a publicly traded investment company; (xvii) member of the Board of Directors of Companhia Providência Indústria e Comércio S.A. (2013 to 2014), a publicly-traded company in the business of manufacturing and marketing non-woven fabrics; (xviii) Director of Daleth Participações S.A., a publicly-traded company (from 2012 to 2015); (xix) Director of Capinauá Empreendimentos e Participações S.A. (since 2007), a publicly traded investment company; (xx) Director of Invitel Legacy S.A. (from 2012), a publicly traded investment company; (xxi) a member of the Board of Directors of RIo Barigui S.A. (from 2012) a private investment company. He graduated in engineering from IMEI in December 1981, and has an MBA with a specialization in Finance from Wharton Business School, University of Pennsylvania (May 1992). Mr. Alberto Ribeiro Guth stated, for all legal purposes, that in the last 5 (five) years, he was not submitted to any criminal convictions or administrative convictions imposed by the Comissão de Valores Mobiliários, or any other legal or administrative final convictions that could have suspended him or prevented him from practicing any of his professional or commercial activities. Mr. Alberto Ribeiro Guth is an independent member of Vale s Board of Directors. The determination of independence results from the fact that (i) he does not have any link Vale, except for possible non-relevant stake in capital; (ii) he is not a controlling shareholder or spouse or relative up to the second degree to controlling shareholders; (iii) he is not bound by shareholders agreement; (iv) he has not been an employee or Director at Vale or of its subsidiaries or affiliated companies in at least 3 (three) years; (v) he is not and has not been, in the last 3 (three) years, a Member of Board of the controlled company; (vi) he does not provide, purchase, offers or negotiates, directly or indirectly, services and/or products to Vale at a relevant scale; (vii) he is not a spouse or relative up to the second degree of any Director or Manager of Vale; (viii) he does not receive other remuneration from Vale besides his board member fee; (ix) he is not, and he has not been in the last 3 (three) years, a partner of and audit firm that audits, or has audited, Vale in this same period; (x) he is not a member of non-profit entity that receives significant financial resources from Vale or its related parties; and (xi) he is not financially dependent on the compensation that shall come to be granted by Vale.

Fernando Jorge Buso Garcia

370.624.177-34

He is a member of Vale s Board of Directors (2015), Coordinator of the Governance and Sustainability Committee (2015) and member of the Executive Development Committee and the Finance Committee (2015). His main professional experiences in the last 5 years include: (i) Member of the Board of Directors of Valepar S.A. (since 2015), controlling shareholder of Vale, a private holding company, where he also acts as (ii) Director (2015); (iii) the Chief Executive Officer and Investor Relations Officer of Bradespar S.A. (since 2015), a publicly-traded company which owns stake in Valepar S.A., a holding company; (iv) Director of Banco Bradesco BBI S.A. (since 2006), an investment bank; (v) member of the Board of Directors of Sete Brasil S.A. (2011 to 2015), and offshore company; (vi) Chairman of the Board of Directors of Smartia Corretora de Seguros S.A. (from 2012 to 2015), an insurance broker; (vii) Chairman of the Board of SMR Grupo de Investimentos e Participações S.A. (from 2014 to 2015), a holding company; (viii) member of the Board of Directors of BCPAR S.A. (from 2013 to 2015), a holding company; (ix) member of the Board of Directors of 2b Capital S.A. (since 2014), a investment management company; (x) member of the Board of Directors of BR Towers S.A. (2013 to 2014); (xi) member of the Board of Directors of CPFL Energias Renováveis S.A. (2011 to 2012), a publicly traded energy production company; (xii) and member of the Board of Directors of LOG Commercial Properties S.A. (from 2013 to 2015), a publicly-traded construction company. He graduated with a Bachelor of Arts in economics from Faculdades Integradas Bennett in December 1978. Mr. Fernando Jorge Buso Gomes stated, for all legal purposes, that in the last 5 (five) years, he has not had any criminal conviction or administrative conviction imposed by Comissão de Valores Mobiliários, or any legal or administrative final convictions that have suspended him or prevented him from any professional or commercial activity.

420

Table of Contents

Yoshitomo Nishimitsu

442.810.487-15

Main professional experience in last five years include (i) Deputy Member of the Board of Directors of Valepar S.A. (2014 to 2015), controlling shareholder of Vale, privately-held company acting as holding; (ii) General Manager of the Division of Mineral Resources and Metals of Mitsui & Co. (Brasil) S.A., Mitsui & Co., Ltd., a publicly traded trading company that is an indirect controlling shareholder of the Company. Graduated in Geology at Kobe University in March 1999, post-graduate in Geology at Kobe University, conclude din March 2001. Mr. Yoshitomo Nishimitsure presented for all legal purposes that in the last five (5) years, he was not subject to any criminal condemnation, any administrative condemnation by the Comissão de Valores Mobiliários, or any condemnation on final decision, in the judicial or administrative spheres, causing suspension or disqualification for the engagement in any professional or commercial activity.

Tarcísio José Massote Godoy

316.688.601-04

Member of Vale s Board of Directors since 2015. He was a deputy member of the Supervisory Board of Vale (2003 to 2007). Main professional experience in last five years include: (i) Executive Secretary in the Ministry of Finance (from January 2015 to December 2015); (ii) General Director of Bradesco Auto/RE, of Bradesco Seguros S.A. (2013 to 2014), insurance company; (iii) Vice-President of Federação Nacional de Seguros Gerais (2013 to 2014), entity in the insurance segment; (iv) Executive Director of Bradesco Seguros S.A. (2010 to 2013), insurance company; (v) President at BrasilPrev (2008 to 2010), pension fund; (vi) Vice-President of Federação Nacional de Previdência Privada e Vida (February to September 2010), pension fund; (vii) Chairman of the Board of Directors of Banco do Brasil (from February 2015 to January 2016), a multiple bank with a commercial portfolio (viii) Member of the Board of Directors of IRB Brasil Resseguros (March to December 2014), reinsurance entity; (ix) Member of the Board of Directors of CEABS (from March 2014 to December 2014); (viii) Certified by the Instituto Brasileiro de Governança Corporativa (2009) (x) Deputy Member of the Supervisory Board of Vale S.A. (2003 to 2007). Graduate in Civil Engineering at Universidade de Brasília in December 1985, post-graduate in Geotechnique, concluded in October 1987, and Civil Engineering, concluded in December 1991, Master s degree in Public Sector Economics in November 2009, at Universidade de Brasília. Mr. Tarcísio José Massote Godoy represented for all legal purposes that in the last five (5) years, he was not subject to any criminal condemnation, any administrative condemnation by the Comissão de Valores Mobiliários, or any condemnation on final decision, in the judicial or administrative spheres, causing suspension or disqualification for the engagement in any professional or commercial activity.

Luciano Galvão Coutinho

636.831.808-20

Member of the Board of Directors (since 2007) and Member of the Strategic Committee of Vale (since 2009), and served as member of this committee 2005 to 2006. Main professional experience in last five years include: (i) President of Banco Nacional de Desenvolvimento Econômico and Social BNDES (since 2007), development bank and controlling shareholder of BNDES Participações S.A. BNDESPAR a company controlled by a shareholder with relevant stake at Vale; (ii) Chairman of Board of Directors of Petróleo Brasileiro S.A. PETROBRAS (April 2015 to April 2016), open capital company working with oil and gas exploration and refinement and production of derivatives, having been member of this body since 2013; He also acts as (i) Member of the International Consulting Council of Fundação Dom Cabral (since 2009), education institution aiming the development of executives, businessmen and companies; (ii) Member of the Curator Council of Fundação Nacional de Qualidade (from June 2013 to June 2016), entity aiming the development of management excellence foundations; and (iii) Member of Director Council of Fundo Nacional de Desenvolvimento Científico e Tecnológico (since 2007), financial assistance entity, and (iv) Member of the International Consulting Board of the National Council for Industrial Development (since 2011), entity responsible for proposing policies for industrial promotion in Brazil. Graduate in Economics at University of São Paulo in June 1969, master s degree in Economics at Instituto de Pesquisas Econômicas, in June 1970, and doctor s degree in Economics from Cornell University, in January 1975. Mr. Coutinho is a guest lecturer at the State University of Campinas and he was a visiting scholar at USP, at the University of Paris XIII, the University of Texas, and at the Ortega y Gasset Institute. Mr. Luciano Galvão Coutinho represented for all legal purposes that in the last five (5) years, he was not subject to any criminal condemnation, any administrative condemnation by the Comissão de Valores Mobiliários, or any condemnation on final decision, in the judicial or administrative spheres, causing suspension or disqualification for the engagement in any professional or commercial activity.

Table of Contents

Gilberto Antonio Vieira

221.153.079-68

Deputy member of Vale s Board of Directors (since 2015). Main professional experience in last five years include: (i) Deputy Member of the Board of Directors of Valepar S.A. (since 2015), controlling shareholder of Vale, privately held company acting as holding; (ii) General Secretary of Confederação Nacional dos Trabalhadores nas Empresas de Crédito (since 1996), class entity; (iii) Deputy Member of the Board of Directors of Cooperativa Habitacional ANABB Ltda. (2014 to 2015), habitation cooperative (iv) Member of the Supervisory Board of Caixa de Assistência dos Funcionários do Banco do Brasil (2008 to 2012), health care provider, acting as chairman of said Board (from 2010 to 2012); (v) Secretary General Officer at Confederação Nacional dos Trabalhadores nas Empresas de Crédito CONTEC (from 1996 to 2016). Graduate in Law at Centro de Ensino Universitário de Brasília in January 1990 and Administration at Fundação Universidade de Blumenau in December 1978, Specialist in Administration in September 1980 also at Universidade de Blumenau. Post-graduate in Foreign Trade at Associação de Ensino Unificado do Distrito Federal, in November 1985, and Politics and Strategy at Universidade de Brasília, in July 1998. Mr. Gilberto Antonio Vieira represented for all legal purposes that in the last five (5) years, he was not subject to any criminal condemnation, any administrative condemnation by the Comissão de Valores Mobiliários, or any condemnation on final decision, in the judicial or administrative spheres, causing suspension or disqualification for the engagement in any professional or commercial activity.

Gueitiro Matsuo Genso

624.201.519-68

Chairman of the Board of Directors (since February 2016), noting that he already was a Permanent member of the Board of Directors (since 2015) and member of the Strategic Committee (since 2015) Main professional experience in last five years include: (i) President of the Board of Directors of Valepar S.A. (2015), controlling shareholder of Vale, privately-held company acting as holding; (ii) President of PREVI Caixa de Previdência dos Funcionários do Banco do Brasil (since 2015), a complementary pension fund that holds indirect stake at the Company through Litel Participações S.A., which, in turn, is a shareholder in the control block of Valepar S.A., controlling shareholder of the Company; (iii) Director of Individuals at Banco do Brasil S.A. (2014 to 2015), financial institution where he also served as (iv) Director of Real Estate Credit (2011 to 2014) and (v) Director of Home Loans (2011 to 2014) and Director of Loans (2010 to 2011); (vi) Director of Products of Banco Nossa Caixa (2009 to 2010), financial institution; (vii) Permanent member of the Supervisory Board of BB Mapfre SH1 Participações S.A. (since 2011), insurance company; (viii) Permanent member of the Supervisory Board of Mapfre BB SH2 Participações S.A. (since 2011), insurance company; (ix) Permanent member of the Board of Directors of Câmara Interbancária de Pagamentos (2014 to 2015), non-profit entity that works with payment and settlement of payments; (x) Director of Individuals of Federação Brasileira de Bancos (2010 to 2015), representative entity in the bank sector; (xi) Member of the Supervisory Board of Grupo Segurador BB (from June 2011 to June 2015). Graduate in Administration at Faculdade Sociedade Paranaense de Ensino e Informática (SPEI) in August 2002. MBA courses in General Qualification for Senior Executives at Fundação Getúlio Vargas (FGV-PR), concluded in August 1998, and Agribusiness at Escola Superior de Agricultura Luiz de Queiroz (ESALQ/USP), concluded in June 2002. Mr. Gueitiro Matsuo Genso represented for all legal purposes that in the last five (5) years, he was not

subject to any criminal condemnation, any administrative condemnation by the Comissão de Valores Mobiliários, or any condemnation on final decision, in the judicial or administrative spheres, causing suspension or disqualification for the engagement in any professional or commercial activity.

Oscar Augusto Camargo Filho

030.754.948-87

Member of the Board of Directors of Vale (since 2003), Member of the Strategic Committee (since 2006) and Member of the Executive Development Committee (since 2003). Main professional experience in last five years include: (i) Permanent Member of Board of Directors of Valepar S.A. (2003 to 2014), controlling shareholder of Vale, privately-held company acting as holding; and (ii) Managing partner of CWH Consultoria Empresarial (since 2003), consulting company. Graduate in Law at Law School of University of São Paulo (USP) Dec 1963, and post graduate in International Marketing by Cambridge University Sep 1970 Mr. Oscar Augusto Camargo Filho represented for all legal purposes that in the last five (5) years, he was not subject to any criminal condemnation, any administrative condemnation by the Comissão de Valores Mobiliários, or any condemnation on final decision, in the judicial or administrative spheres, causing suspension or disqualification for the engagement in any professional or commercial activity.

Table of Contents

Moacir Nachbar Junior

062.947.708-66

Deputy member of the Board of Directors and member of the Comptroller Committee at Vale (since 2015). Main professional experience in last five years include: (i) Permanent member of the Board of Directors of Valepar S.A. (since April 2015), controlling shareholder of Vale, controlling shareholder of Vale, privately held company acting as holding; (ii) Executive Director of Banco Bradesco S.A. (since February 2015), financial institution; (iii) Deputy Member of the Board of Associação Brasileira das Companhias Abertas ABRASCA (since April 2013), civil association that assists on the interests of open capital companies; (iv) Deputy member of the Board of Directors of Fidelity Processadora e Serviços S.A. (from February 2012 to April 2015), credit card processing company; (v) Member of *Mesa Regedora* of Fundação Bradesco (since March 2005), foundation working with education; (vi) Member of the Board of Directors of Fundação Instituto de Moléstias do Aparelho Digestivo e da Nutrição (since February 2012), hospital medical foundation; (vii) Deputy member of the Consulting Board of Fundo Garantidor de Créditos FGC (since 2013), fund that lends credit guarantees against associate institutions; (viii) Deputy Member of the Supervisory Board at TopClube Bradesco Segurança, Educação e Assistência Social (from April 2003 to April 2012), a social rights advocacy association; (ix) Director of 2bCapital Participações Ltda. (since April 2015); (x) Director of 2b Capital S.A. (since March 2015); (xi) Managing Director at BEC Distribuidora de Títulos e Valores Mobiliários Ltda. and of BEM Distribuidora de Títulos e Valores Mobiliários Ltda. (since April 2015).. Graduate in Accounting in December 1987, Post-Graduate Lato Sensu in Financial Administration in July 1990, at Faculdades Integradas Campos Salles , MBA Controller at FIPECAFI - Fundação Instituto de Pesquisa Contábeis, Atuariais e Financeiras - FEA-USP in November 2000 and Tuck Executive Program at Tuck School of Business at Dartmouth - Hanover, New Hampshire, USA in August 2009. Mr. Moacir Nachbar Junior represented for all legal purposes that in the last five (5) years, he was not subject to any criminal condemnation, any administrative condemnation by the Comissão de Valores Mobiliários, or any condemnation on final decision, in the judicial or administrative spheres, causing suspension or disqualification for the engagement in any professional or commercial activity.

Victor Guilherme Tito

044.878.356-82

Main professional experience in last five years include: (i) Chief of the Portfolio Management Department at Banco Nacional de Desenvolvimento Econômico e Social BNDES (since 2014), and institution controlled by shareholder with relevant stake at Vale, where he also served as (ii) Manager (2009 to 2012). Graduate in Economics at IBMEC in June 2004, MBA at London Business School, concluded in July 2014. Mr. Victor Guilherme Tito represented for all legal purposes that in the last five (5) years, he was not subject to any criminal condemnation, any administrative condemnation by the Comissão de Valores Mobiliários, or any condemnation on final decision, in the judicial or administrative spheres, causing suspension or disqualification for the engagement in any professional or commercial activity.

Sergio Alexandre Figueiredo Clemente

373.766.326-20

Permanent Member of the Board of Directors of Vale (since May 2014) and he was elected Vice-Chairman in 2015. Main professional experience in last five years include: (i) Member of the Board of Directors of Valepar S.A. (since May 2014), holding and controlling shareholder of Vale; (ii) Executive Vice-President (since 2012) of Banco Bradesco, a publicly-traded financial institution controlled by shareholders that have indirect control of Vale, where he also served as (iii) member of the Risk Integrated Management and Capital Allocation Committee of Banco Bradesco (since 2012); (iv) and member of the Sustainability Committee (since 2014)) (v) member of the Ethics Committee (since April 2015); and (vi) member of the Internal Controls and Compliance Committee (since June 2015); and (vii) Executive Director Manager of Banco Bradesco (2006 to 2012); (viii) Member of the Board of Directors of Cidade de Deus Companhia Comercial de Participações (since 2012), holding; (ix) Director of Nova Cidade de Deus Participações S.A. (since 2012), holding; (x) Vice-President of Bradesco Leasing S.A. Arrendamento Mercantil (since 2012), open capital company that acts in the lease segment; and (xi) Director at Bradespar S.A. (since 2014), an open capital holding, indirect controlling shareholder of Vale; (xii) Executive Director at Millennium Security holdings Corp, a Bradespar subsidiary, since June 2014; (xiii) Executive Director at Antares Holdings Ltda and Brumado Holdings Ltda., both Bradespar subsidiaries, since April 2014; (xiv) Executive Director at NCD Participações Ltda, an investment holding company in Bradespar (since 2013); (xv) Member of the Board of Directors at BBD Participações S.A., an investment holding company in Bradespar (since 2012); and (xvi) Member of the Comissão de Mercado de Capitais da Associação Brasileira das Companhias Abertas ABRASCA (since 2015), a civil association working on behalf of publicly traded companies. To learn about other positions where Mr. Sergio Alexandre Figueiredo Clemente served in other companies, see item 12.13 in this Reference Form. Graduate in Mechanic Engineering at PUC

Table of Contents

MG in 1983, and Executive MBA in Finance at IBMEC in 1987, as well as specialization in Finance, at PDG-EXEC of Sociedade de Desenvolvimento Empresarial in 1992 and, participation in PGA - Programa de Gestão Avançada, at Fundação Dom Cabral and INSEAD in 2006. Mr. Sergio Alexandre Figueiredo Clemente represented for all legal purposes that in the last five (5) years, he was not subject to any criminal condemnation, any administrative condemnation by the Comissão de Valores Mobiliários, or any condemnation on final decision, in the judicial or administrative spheres, causing suspension or disqualification for the engagement in any professional or commercial activity.

Carlos Roberto de Assis Ferreira

342.680.066-72

Employee at Vale S.A. (since 1979), having served in different positions, and the most recent position held was mechanic train operator; assigned to Sindicato Metabase de Itabira e Região. Main professional experience in last five years include: treasury director at Sindicato Metabase de Itabira e Região (since 2014), class entity. High School finished at Escola Estadual Zeca Amâncio, Itabira, State of Minas Gerais. Mr. Carlos Roberto de Assis Ferreira represented for all legal purposes that in the last five (5) years, he was not subject to any criminal condemnation, any administrative condemnation by the Comissão de Valores Mobiliários, or any condemnation on final decision, in the judicial or administrative spheres, causing suspension or disqualification for the engagement in any professional or commercial activity

Robson Rocha

298.270.436-68

Deputy member of the Board of Directors of Vale (since 2015). Main professional experience in last five years include: (i) Permanent member of Vale s Board of Directors (from 2011 to 2015), (ii) Deputy Member of the Board of Directors of Valepar S.A. (since 2015), controlling shareholder of Vale, controlling shareholder of Vale, privately held company acting as holding; (iii) Vice-President de of Personnel Management e Sustainable Development at Banco do Brasil S.A. (from 2009 to 2015), open capital financial institution and (iv) Vice-Chairman of the Board of Directors of CPFL Energia S.A. (2010 to 2011), open capital company acting as holding in the power sector, controlled by PREVI Banco do Brasil s Employees Pension Fund, a pension fund that has indirect stake in the Company through Litel Participações S.A., which, in turn is a shareholder in the controlling block of Valepar S.A., controlling shareholder of the Company; and, (iv) Member of the Board of Directors of Banco Nossa Caixa S.A. (from May 2009 to November 2009), a financial institution incorporated by Banco do Brasil. Graduate in Business Administration at UNICENTRO Newton Paiva, Belo Horizonte, Dec 1998, Course in Basic General Training for Senior Executives by Universidade Federal de Minas Gerais (UFMG) in December 1997, post graduate in Strategic Management by UFMG concluded in March 2001; master s degree in Marketing by Fundação Ciências Humanas Pedro Leopoldo concluded in December 2001, and MBA in Finance by Fundação Dom Cabral, concluded in December 2012. Mr. Robson Rocha represented for all legal purposes that in the last five (5) years, he was not subject to any criminal condemnation, any administrative

condemnation by the Comissão de Valores Mobiliários, or any condemnation on final decision, in the judicial or administrative spheres, causing suspension or disqualification for the engagement in any professional or commercial activity.

Lucio Azevedo

526.635.317-15

Member of Vale s Board of Directors (since 2015). Employee at Vale S.A. (since 1985), working as train operator, assigned to Sindicato dos Trabalhadores em Empresas Ferroviárias dos Estados do Maranhão, Pará e Tocantins. Main professional experience in last five years include President of Sindicato dos Trabalhadores em Empresas Ferroviárias dos Estados do Maranhão, Pará e Tocantins (since 2013), class entity. Mr. Lucio Azevedo did not finish high school. Mr. Lucio Azevedo represented for all legal purposes that in the last five (5) years, he was not subject to any criminal condemnation, any administrative condemnation by the Comissão de Valores Mobiliários, or any condemnation on final decision, in the judicial or administrative spheres, causing suspension or disqualification for the engagement in any professional or commercial activity.

Table of Contents

Motomu Takahashi

Passaport TR140020

Member of the Board of Directors of Vale (since 2016). Main professional experience in last five years include the following positions at Mitsui & Co., Ltd., an open capital trading company, indirect controlling shareholder of the Company: (a) Executive Deputy President of Americas Business Unit (2015 to 2016); (b) Senior Executive Director of Americas Business Unit (2014 to 2015); and General Executive Director and Director of Iron and Steel Operations Business (2011 to 2014); (d) General Director and Director of Iron and Steel Business Operations (2010 to 2011). Mr. Motomu Takahashi also acted in the following positions in steel companies that are part of the Mitsui Co. Ltd. economic group: (a) Secretary of Steel Technologies, Inc. (2007 to 2009); (b) CEO of Mitsui Steel, Inc., (2004 to 2005); (c) CEO of Mitsui Steel Development Co., Inc. (2002 to 2004). He graduated from Economy by Tokyo University in March 1977 and completed the Advanced Management Program at Harvard Business School in 2001. Mr. Motomu Takahashi declared, for all legal purposes that in the last five (5) years, he was not subject to any criminal convictions, or any administrative convictions by the Comissão de Valores Mobiliários, or any legal or administrative conviction on final decision that could cause the suspension or disqualification of his engagement in any professional or commercial activity.

Eduardo de Oliveira Rodrigues Filho

442.810.487-15

Deputy Member of the Board of Directors of Vale (since 2011) and member of the Financial Committee (since 2011) and the Governance and Sustainability Committee (since 2015). Main professional experience in last five years include: (i) Permanent member of the Board of Directors of Valepar S.A. (since 2014) and Deputy member of the Board of Directors of Valepar S.A. (2008 to 2012), controlling shareholder of Vale, privately-held holding company; (ii) Partner at CWH Consultoria Empresarial (since 2008), consulting company. Graduate in Civil Engineering at Pontifícia Universidade Católica do Rio de Janeiro PUC-RJ, in Dec 1978, and post-graduate in Transportation Planning at PCL Politechnic of Central London, in October 2000. Mr. Eduardo de Oliveira Rodrigues Filho represented for all legal purposes that in the last five (5) years, he was not subject to any criminal condemnation, any administrative condemnation by the Comissão de Valores Mobiliários, or any condemnation on final decision, in the judicial or administrative spheres, causing suspension or disqualification for the engagement in any professional or commercial activity.

Luiz Maurício Leuzinger

009.623.687-68

Deputy Member of the Board of Directors of Vale (since 2012), where he also served in 2003. He served as Member of the Financial Committee (2007 to 2015) and Member of the Executive Development Committee (2012 to 2015) and member of the Governance and Sustainability Committee (2014 to 2015). Main professional experience in last five years include: (i) Deputy Member of the Board of Directors of Valepar S.A. (since 2014), controlling shareholder of Vale, controlling shareholder of Vale, privately held company acting as holding, where he also acted as (ii) Director; (iii) Director-President of Bradespar S.A. (since 2012), open capital company with interest in Valepar S.A., working as holding, indirect controlling shareholder of Vale; and (iv) Member of Board of Directors of Valid Soluções e Serviços de Segurança em Meios de Pagamento e Identificação S.A. (since 2006), current corporate name of American Banknote S.A., open capital company working with graphic services in general and plastic, magnetic cards, service provision and others. Graduate in Electric Engineering at Escola Nacional de Engenharia (currently Federal University of Rio de Janeiro UFRJ) on December 1, 1965. Specialization in Economic Engineering and master s degree in Electric Engineering at *Illinois Institute of Technology*, in Chicago, USA, both on July 1, 1968. Mr. Luiz Maurício Leuzinger represented for all legal purposes that in the last five (5) years, he was not subject to any criminal condemnation, any administrative condemnation by

the Comissão de Valores Mobiliários, or any condemnation on final decision, in the judicial or administrative spheres, causing suspension or disqualification for the engagement in any professional or commercial activity.

Dan Antonio Marinho Conrado

754.649.427-34

Permanent member of the Board of Directors (since 2012). Chairman of the Board of Directors of the Company (from 2012 to February 2016), and permanent member of the Strategic Committee of Vale (2012 to April 2015 and June 2015 to February 2016). Main professional experience in last five years include: (i) President of PREVI Caixa de Previdência dos Funcionários do Banco do Brasil (since 2012), a pension fund with indirect stake in the Company through Litel Participações S.A., which, in turn, is shareholder of Valepar S.A. s

Table of Contents

controlling block, a controlling shareholder of the Company; (ii) Chairman of the Board of Directors (since 2012) and Managing Director of Valepar S.A. (2012 to 2015), controlling shareholder of Vale, privately-held company acting as holding; (iii) Deputy Member of the Board of Directors of Petróleo Brasileiro S.A. Petrobras (from July 2015 to November 2015), a publicly traded oil company; (iv) Effective Member of the Board of Directors of BR Distribuidora (July 2015 to November 2015), closed capital company specialized in the trade and distribution of oil products; (v) Member of the Board of Directors of Aliança do Brasil S.A. (2010 to 2011), privately-held capital insurance company; (iv) Deputy Member of the Board of Directors of Brasilprev S.A. (January 2010 March 2010), open capital pension fund; (vi) Member of the Board of Directors of Fras-Le S.A. (2010 to 2013), open capital company acting in the production of friction materials; (viii) Deputy Member of the Board of Directors of Mapfre BBSH2 Participações S.A. (since 2011), open capital insurance company; (ix) Director of Distribution São Paulo SP (2010 to 2011) of Banco do Brasil S.A., open capital financial institution, where he also served as (x) Vice-President of Retail, Distribution, and Operations (2011 to 2012). Graduate in Law at Universidade Dom Bosco/MS in December 2001, and MBA at Fundação COPPEAD/Universidade Federal do Rio de Janeiro, in October 1998, and MBA in Business Management at INEPAD - Instituto de Ensino e Pesquisa em Administração/Universidade Federal de Mato Grosso - UFMT, in December 2009. Mr. Dan Antonio Marinho Conrado represented for all legal purposes that in the last five (5) years, he was not subject to any criminal condemnation, any administrative condemnation by the Comissão de Valores Mobiliários, or any condemnation on final decision, in the judicial or administrative spheres, causing suspension or disqualification for the engagement in any professional or commercial activity.

Marcel Juviniano Barros

029.310.198-10

He is Permanent Member of the Board of Directors of Vale (since 2012) and Member of the Executive Development Committee (since 2013).. Main professional experience in last five years include: (i) Security Director at PREVI Caixa de Previdência dos Funcionários do Banco do Brasil (since 2012), complementary pension fund, with indirect stake in the Company through Litel Participações S.A., which, in turn, is shareholder of Valepar S.A. s controlling block, a controlling shareholder of the Company; (ii) Permanent Member of the Board of Directors of Valepar (since 2012), controlling shareholder of Vale, privately-held company that acts as holding; (iii) from 1987 to 2012 he served in different positions at Banco do Brasil S.A., financial institution, where he also served as Union Auditor; (iv) General Secretary of the National Federation of Employees in the Financial Segment, where he coordinated international networks (2008 to 2011); and (v) Member of the Board of PRI Principles for Reasonable Investment of the UN since 2012. Graduated in History at FESB - Fundação Municipal de Ensino Superior de Bragança Paulista in 1995.
Mr. Marcel Juviniano Barros represented for all legal purposes that in the last five (5) years, he was not subject to any criminal condemnation, any administrative condemnation by the Comissão de Valores Mobiliários, or any condemnation on final decision, in the judicial or administrative spheres, causing suspension or disqualification for the engagement in any professional or commercial activity.

Paulo José dos Reis Souza

494.424.306-53

Member of Vale s Supervisory Board (since April 2016). Main professional experience in last five years include: (i) Deputy secretary of Fiscal Policy at the Finance Ministry (since October 2015); (ii) Director of Programs at the Finance Ministry (2011 to 2015); (iii) Member of the Supervisory Board at Petróleo Brasileiro S.A. PETROBRAS, a publicly traded oil company (from April 2012 to April 2016); (iv) Member of the Supervisory Board at Banco do Brasil S.A., an open capital financial institution (from April 2012 to April 2016); (v) Member of the Supervisory Board at BR Distribuidora, a closed capital company specialized in the trade and distribution of oil products (2008 to 2012); (vi) Member of the Supervisory Board at Indústrias Nucleares do Brasil S.A., an open capital company specialized in the development of nuclear energy (2011 to 2012); and Member of the Supervisory Board at Conselho Fiscal do Serviço Federal de Processamento de Dados SERPRO, a close capital company specialized in information and data processing systems (April 2015 to April 2016). He graduated in business administration from Centro Universitário UNA in December 1987 with a major in Public Policy and Government Management from Escola Nacional de Administração Públicas ENAP, in June 1991, and he obtained a masters degree in Public Sector Economy from Fundação Getúlio Vargas FGV, in October 1997. Mr. Paulo José dos Reis Souza has declared for all legal purposes that in the last five (5) years, he was not subject to any criminal condemnation, any administrative condemnation by the Comissão de

Table of Contents

Valores Mobiliários, or any condemnation on final decision, in the judicial or administrative spheres, causing suspension or disqualification for the engagement in any professional or commercial activity.

Marcelo Amaral Moraes

929.390.077-72

Permanent Member of Supervisory Board of Vale (since 2004), where he served as Deputy Member of the Board of Directors (2003). Main professional experience in last five years include: (i) Member of the Supervisory Board of Acedo Ti S.A., a close capital company specialized in design, implementation, and maintenance of datacenters (since April 2016); (ii) Member of the Board of Directors of Eternit S.A., a open capital company specialized in several activities such as agribusiness, purchase and sale of gold, industrialized cement, concrete, plaster and other products (since April 2016) (iii) Executive Director of Stratus Investimentos Ltda. (2006 to 2010), private equity manager; (iv) Executive Director of Capital Dynamics Investimentos Ltda. (2012 to 2015), private equity manager; and (v) Observing Member of the Board of Directors of Infinity Bio-Energy S.A. (2011 to 2012). Graduated in Economics at the Federal University of Rio de Janeiro in January 1991, MBA by COPPEAD/UFRJ in November 1993, and post-graduation in Corporate Law and Arbitration at Fundação Getúlio Vargas in November 2003. Mr. Marcelo Amaral Moraes represented for all legal purposes that in the last five (5) years, he was not subject to any criminal condemnation, any administrative condemnation by the Comissão de Valores Mobiliários, or any condemnation on final decision, in the judicial or administrative spheres, causing suspension or disqualification for the engagement in any professional or commercial activity. Mr. Marcelo Amaral Moraes is an independent member of Vale s Supervisory Board. The criteria used to determine Mr. Marcelo Amaral Moraes independence was the provision set forth in section 3.13 of the *Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited.*

Oswaldo Mário Pêgo de Amorim Azevedo

005.065.327-04

Deputy Member of Supervisory Board (since 2005) and Controlling Committee (since 2015) of Vale, where he also served as Permanent Member of Supervisory Board (2004 to 2005). Main professional experience in last five years include: (i) Member of the Special Consulting Council of the Union of Private Insurance, Capitalization and Reinsurance Companies of Rio de Janeiro and Espírito Santo (since 2005); (ii) Deputy Member of the Audit Committee of Prudential do Brasil Seguros de Vida S.A. and Kyoei do Brasil Vale de Seguros (since 2014), insurance company, (iii) Director of Sul América Cia de Seguros Gerais (2008 - 2012), held insurance company; (iv) Ombudsman of Sul America Seguros, insurance company (2005 to 2012), where he also served as (v) Vice-President of Institutional Relations e Branches Abroad (1990 to 2010); (vi) Vice-President of the Union of Private Insurance, Capitalization and Reinsurance Companies of Rio de Janeiro (2007 to 2012); (vii) Deputy Member of the Board of Directors of Brasil Veículos Cia de Seguros (2006 to 2010) and of (viii) Brasil Saúde Cia de Seguros (2006 to 2010), insurance companies; (ix) Director and (xi)Vice-President of Sul America Cia. Nacional de Seguros, insurance company (1980 to 2010); (xii) Director and Vice-President of Nova Ação Participações S.A., open capital company engaged in asset management and interest in civil and commercial companies (2006 to 2010). Graduate in Industrial and Production Engineering at Escola

Politécnica of Pontifícia Universidade Católica do Rio de Janeiro (PUC-RJ) in January 1964. Mr. Oswaldo Mário Pêgo de Amorim Azevedo represented for all legal purposes that in the last five (5) years, he was not subject to any criminal condemnation, any administrative condemnation by the Comissão de Valores Mobiliários, or any condemnation on final decision, in the judicial or administrative spheres, causing suspension or disqualification for the engagement in any professional or commercial activity. Mr. Oswaldo Mário Pêgo de Amorim Azevedo is an independent member of Vale s Supervisory Board. The criteria used to determine Mr. Oswaldo Mário Pêgo de Amorim Azevedo s independence was the provision set forth in section 3.13 of the *Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited.*

Sérgio Mamede Rosa do Nascimento

650.042.058-68

Member of Vale s Supervisory Board (since May 2016). Main professional experience in last five years include: (i) Member of the Supervisory Board of Fibria Celulose S.A., a publicly traded company from the cellulose sector; (ii) Permanent Member of the Supervisory Board of Contax Participações S.A. (from 2009 to 2011), a publicly traded company; (iii) Member of the Supervisory Board of Marisol S.A. (from 2011 to 2012), an open capital company from the garment sector; and (iv) Managing Partner at Barra Livros Cursos Editora Ltda. (since 2011). He graduated in Physics Universidade de Franca in 1976, has a graduate degree in economic engineering from AEUDF Associação de Ensino Unificado

Table of Contents

do Distrito Federal (1983), and MBA in Finance com IBMEC Instituto Brasileiro de Mercado de Capitais (1991). Mr. Sergio Mamede Rosa do Nascimento declared for all legal purposes that in the last five (5) years, he was not subject to any criminal condemnation, any administrative condemnation by the Comissão de Valores Mobiliários, or any condemnation on final decision, in the judicial or administrative spheres, causing suspension or disqualification for the engagement in any professional or commercial activity. Mr. Sergio Mamede Rosa do Nascimento is an independent member of Vale s Supervisory Board. The criteria used to determine Mr. Sergio Mamede Rosa do Nascimento s independence was the provision set forth in section 3.13 of the *Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited*

Raphael Manhães Martins

096.952.607-56

His main professional experiences in the last 5 years include: (i) member of the Board of Directors of Eternit S.A. (2015), a publicly-traded building materials company; (ii) Effective Member of Light S.A. s Supervisory Board (from 2012 to 2013, and since 2014), a publicly-traded electric power company; (iii) a member of the Supervisory Board of Embratel Participações S.A. (September to December 2014), a publicly-held holding company. He graduated in law from UERJ in February 1981. Mr. Raphael Manhães Martins stated, for all legal purposes, that in the last 5 (five) years, he was not submitted to any criminal convictions or administrative convictions imposed by the Comissão de Valores Mobiliários, or any other legal or administrative final convictions that could have suspended him or prevented him from practicing any of his professional or commercial activities.

Julio Sergio de Souza Cardozo

005.985.267/49

His main professional experiences in the last 5 years include: (i) chairman of the Supervisory Board of the Rio 2016 Olympic Games (since 2011); (ii) member of the Supervisory Board of Usinas Siderúrgicas de Minas Gerais S.A.-USIMINAS (from April 2012 to March 2016), a publicly-held steel company; (iii) member of the Supervisory Board of Fibria Celulose S.A. (since 2014), a publicly-held cellulose and paper company; (iv) member of the Supervisory Committee of Saraiva S.A. Livreiros Editores (since 2014), a publicly-held publishing company; (v) member of the Supervisory Board of Centrais Elétricas de Santa Catarina S.A. CELESC (2010 to 2013), a publicly-traded electric power company ; (vi) member of the Supervisory Board of Bradespar S.A. (2013 to 2014), a publicly-traded company which owns stake in Valepar S.A., a holding company; (vii) CEO of BBA Aviation South America (since 2008), an aviation support services company; (viii) Executive Director of Ernst & Young (since 1985), where he was a partner (from 1990 to 2007), a consulting and audit services company ; and (ix) an Audit and Internal Controls Professor at Fundação Getúlio Vargas FGV (since October 2009) and at the University of the State of Rio de Janeiro UERJ (1980 to 2014). He graduated in accounting and administrative sciences from Mackenzie University Rio de Janeiro, in December 1975 and December 1977, respectively. Mr. Julio Sergio de Souza Cardozo stated, for all legal purposes, that in the last 5 (five) years, he was not submitted to any criminal convictions or administrative convictions imposed by the Comissão de Valores Mobiliários, or any other legal or administrative final convictions that could have suspended him or prevented him from practicing any of his professional or commercial activities. Mr. Julio Sergio de Souza Cardozo is an independent member of Vale s Supervisory Board. The criteria used for determining the independence of Mr. Julio Sergio de Souza Cardozo was provided in section 3.13 of Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited.

Aníbal Moreira dos Santos

011.504.567-87

He is a member of Vale s Supervisory Board (since 2005), where he also held the position of Deputy Member (April-July 2005). His main professional experiences in the last 5 years include: (i) Member of Log-In Logística Intermodal S.A. s Supervisory Board (2009 to 2014), publicly traded company that operates intermodal transportation; (ii) Member of Supervisory Board of Associação dos Participantes Ativos, Assistidos e Beneficiários da Fundação CAEMI Supervisory Board (since 2013). He graduate as a technical accountant from Escola Técnica de Comércio da Fundação Getúlio Vargas in April 1962. Mr. Aníbal Moreira dos Santos stated, for all legal purposes, that in the last 5 (five) years, he was not submitted to any criminal convictions or administrative convictions imposed by the Comissão de Valores Mobiliários,

Table of Contents

or any other legal or administrative final convictions that could have suspended him or prevented him from practicing any of his professional or commercial activities. Mr. Anibal Moreira dos Santos is an independent member of Vale s Supervisory Board. The criteria used for determining the independence of Mr. Aníbal Moreira dos Santos was provided in section 3.13 of Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited.

Sandro Kohler Marcondes

485.322.749-00

He is a member of Vale s Supervisory Board (since May 2016), where he also acted as Permanent Member of the Board of Directors (from April 2007 to March 2011). His main professional experiences in the last 5 years include: (i) an alternate member of Valepar S.A. s Board of Directors of (from 2009 to April 2015), controlling shareholder of Vale, a private holding company; (ii) Director of Banco do Brazil S.A. (since 2005), a financial institution, where he held several positions, such as Capital Markets and Infrastructure Officer (from 2013), Comptroller (of 2012 to 2013) and Commercial Director (2009 to 2012); (iii) Director of BB Leasing S.A. Arrendamento Mercantil (2005 to 2008), a private leasing company; (iv) Chairman of the Board of Directors of Banco do Brasil A.G., Vienna (from 2008 to 2009), Banco do Brasil S.A. s subsidiary in Austria; (v) an alternate member of the Board of Directors of Banco Patagonia S.A. (from 2011 to 2012), a publicly traded financial institution; (vii) member of the Supervisory Committee of Caixa de Previdência dos Funcionários do Banco do Brasil - PREVI (from 2012 to 2014), a private pension entity, that holds indirect participation in the Company by means of Litel Participações S.A., which, in turn, is a shareholder of Valepar S.A. s controlling block, controlling shareholder of the Company; (viii) a member of the Supervisory Board of Embraer (from 2014 to 2015) and (ix) member of the Deliberative Council of the healthcare plan operator CASSI Caixa de Assistência de Funcionários do Banco do Brasil (from 2012 to 2013). He graduated in business administration from Universidade Estadual Centro Oeste PR in December 1986, and completed his master s degree in business administration in April 1994 from Fundação Getulio Vargas (FGV). Mr. Sandro Kohler Marcondes stated, for all legal purposes, that in the last 5 (five) years, he was not submitted to any criminal convictions or administrative convictions imposed by the Comissão de Valores Mobiliários, or any other legal or administrative final convictions that could have suspended him or prevented him from practicing any of his professional or commercial activities. Mr. Sandro Kohler Marcondes is an independent member of Vale s Supervisory Board. The criteria used for determining the independence of Mr. Sandro Kohler Marcondes was provided in section 3.13 of Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited.

Paula Bicudo de Castro Magalhães

787.873.861-00

She is as alternate member of Vale s Supervisory Board (since April 2016). Her main professional experiences in the last 5 years include: (i) Chief of Staff for the CEO of the Agência Nacional de Aviação Civil ANAC (2012 to 2015), a federal regulatory agency that oversees civil aviation in Brazil; (II) Coordinator of technical analysis and information at the Ministry of Finance (2011 to 2012); (III) Member of the Statutory Supervisory Committee of Finame (since 2015), a Banco Nacional de Desenvolvimento Econômico e Social BNDES financing program; (IV) Member of the Statutory Supervisory Committee at Empresa Brasileira de Hemoderivados e Biotecnologia Hemobras (2011 to 2012), a publicly traded pharmacochemistry manufacturing company. She graduated in economics from the University of Brasilia in 1998 and got her master s degree in Economics of the Public Sector from the University of Brasilia in 2000. Mrs. Paula Bicudo de Castro Magalhães stated, for all legal purposes, that in the last 5 (five) years, he was not submitted to any criminal convictions or administrative convictions imposed by the Comissão de Valores Mobiliários, or any other legal or administrative final convictions that could have suspended him or prevented him from practicing any of his professional or commercial activities. Mrs. Paula Bicudo de Castro Magalhães is an independent member of Vale s

Supervisory Board. The criteria used for determining the independence of Mrs. Paula Bicudo de Castro Magalhães was provided in section 3.13 of Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited.

Table of Contents

Arthur Prado Silva

991.897.047-20

He is an alternate member of the Board of Directors (since July 2015) and member of Vale s Governance and Sustainability Committee (since April 2015). His main professional experiences in the last 5 years include: (i) member of the Board of Directors of Valepar S.A. (since July 2015), controlling shareholder of Vale, a private holding company; (ii) Member of the Board of Directors of Litel Participações S.A. (since July 2015), indirect shareholder of Vale, a holding company, where he also acted as Chief Administrative Officer (from 2013 to 2015); (iii) Member of the Board of Directors of Litela Participações S.A. and of Litel B Participações S.A. (since July 2015), a publicly-held holding companies that are subsidiaries of Litel Participações S.A., and he also acted as Managing Director (from 2013 to 2015) in these enterprises; (iv) member of the Supervisory Committee of Tupy S.A. (from 2011 to 2015), a publicly-traded metallurgical company, controlled by PREVI Caixa de Previdência dos Funcionários do Banco do Brasil, a private pension fund, which holds indirect participation in the Company through Litel Participações S.A., which, in turn, is a shareholder Valepar S.A. s controlling block, controlling shareholder of the Company; (v) Member of the Board of Directors of Sul 116 Participações S.A. (2011 to 2015), a publicly-traded holding company; (vi) Member of the Board of Directors of 521 Participações S.A. (since 2006), a publicly-traded holding; (vii) Permanent Member of GTD Participações S.A. s Board of Director (2008 to 2013), a publicly-traded holding company; (viii) Alternate Member of the Board of Directors of Companhia de Energia Elétrica da Bahia Coelba (since 2003), a publicly-traded electric energy trading and distribution company; and (ix) Member Rio Grande Energia S.A. s Finance Committee (since 2003), a publicly-traded electric energy generation company. He graduated in law in December 1999, as concluded postgraduate studies in accounting and finance in May 2001, and in tax law, in March 2009, all from Cândido Mendes University, in addition to an MBA in corporate finance from Fundação Getúlio Vargas, in December 2004. Mr. Arthur Prado stated, for all legal purposes, that in the last 5 (five) years, he was not submitted to any criminal convictions or administrative convictions imposed by the Comissão de Valores Mobiliários, or any other legal or administrative final convictions that could have suspended him or prevented him from practicing any of his professional or commercial activities.

Table of Contents

Marcelo Gasparino da Silva

807383469-34

Alternate member of Vale s Board of Directors of Vale (since May 2016). His main professional experiences in the last 5 years include: (i) member of the Board of Directors of Eternit S.A., a publicly-traded building materials company i (from 2014), where he also acted as (ii) Legal Committee Coordinator and Compliance (since may 2016); (iii) member of the Board of Directors of Centrais Elétricas Brasileiras S.A. Eletrobras, a publicly-held electricity company (since May 2016); (iv) member of the Board of Directors of Eletropaulo Metropolitana Eletricidade de Sao Paulo Sa, a publicly traded electric power distribution company (since May 2016), where he also acted as (v) member of the Supervisory Committee; (vi) member of the Board of Directors of Companhia Energética de Minas de Minas Gerais S.A. CEMIG, a publicly-traded electric energy company (since May 2016); (vii) member of the Board of Directors of Battistella ADM. Participações S.A., a publicly-traded holding company (since May 2016); (viii) member of the Board of Directors of Usinas Siderúrgicas de Minas Gerais SA-USIMINAS, a publicly-held steel company (from 2012 to April 2016), where he also acted as (ix) Chairman of the Board of Directors (from 2015 to April 2016); (x) member of the Board of Directors of Bradespar S.A., a publicly-traded company that owns stake in Valepar S.A., a holding company, indirect controlling shareholder of Vale (from 2015 to April 2016); (xi) member of the Board of Directors of Centrais Elétricas de Santa Catarina S.A. CELESC, a publicly-traded energy distribution company (from 2011 to 2014); (xii) member of the Board of Directors of Tecnisa S.A., a publicly traded construction company (from 2012 to 2014); (xiii) member of the Board of Directors of SC Gás (from 2012 to 2013); (xiv) member of the Supervisory Board of AES Tietê S.A., a publicly traded energy trade and distribution company (from 2013 to 2014); and (xv) member of the Supervisory Committee of Renuka Brazil (from 2014 to 2015). He is also (i) Chairman of the Advisory Board of the firm Gasparino, Sachet, Roman, Barros & Marchiori Advogados (since 2010), (ii) a certified Administration Adviser (since 2010) and he is a member of the Banco de Conselheiros do Instituto Brasileiro de Governança Corporativa IBGC (2011), (iii) member of Comissão Técnica da Associação de Investidores no Mercado de Capitais AMEC (since 2013), (iv) spokesman for the Grupo de Governança Corporativa GGC (since 2013) (v) the chapter Coordinator Santa Catarina (since 2014). He graduated in law in January 1995 from the Federal University of Santa Catarina, and have (i) a postgraduate course in tax administration from Escola Superior de Administração e Gerência ESAG/FEPESE, which he complete in December 2000 and (ii) a master s degree in Comptroller, auditing, and taxes from FGV/FEPESE. In 2007 he started his executive career as Legal Institutional Officer at CELESC (2007 to 2009),and participated in the Executive Program on Mergers and Acquisitions at the London Business School (2009) and in specific courses in the financial and strategic areas at the IOD-Institute of Directors in London (2009).
Mr. Marcelo Gasparino da Silva stated, for all legal purposes, that in the last 5 (five) years, he was not submitted to any criminal convictions or administrative convictions imposed by the Comissão de Valores Mobiliários, or any other legal or administrative final convictions that could have suspended him or prevented him from practicing any of his professional or commercial activities. Mr. Marcelo Gasparino da Silva is an independent member of Vale s Board of Directors. The determination of independence results from the fact that (i) he does not have any link Vale, except for possible non-relevant stake in capital; (ii) he is not a controlling shareholder or spouse or relative up to the second degree to controlling shareholders; (iii) he is not bound by shareholders agreement; (iv) he has not been an employee or Director at Vale or of its subsidiaries or affiliated companies in at least 3 (three) years; (v) he is not and has not been, in the last 3 (three) years, a Member of Board of the controlled company; (vi) he does not provide, purchase, offers or negotiates, directly or indirectly, services and/or products to Vale at a relevant scale; (vii) he is not a spouse or relative up to the second degree of any Director or Manager of Vale; (viii) he does not receive other remuneration from Vale besides his board member fee; (ix) he is not, and he has not been in the last 3 (three) years, a partner of and audit firm that audits, or has audited, Vale in this same period; (x) he is not a member of non-profit entity that receives significant financial resources from Vale or its related parties; and (xi) he is not financially dependent on the compensation that shall come to be granted by Vale.

431

Table of Contents

12.7/8 Composition of the statutory committees, and auditing, financial and compensation committees.

CPF or passport number	Other committee/other positions description	Number of Consecutive Terms	Date of Birth	Date Took Office	Elected by controlling company
Arthur Prado Silva	Governance and Sustainability Committee	Member	Bank employee	04/29/2015	Until the 2017 General Ordinary Meeting
Deputy member of Vale s Board of Directors		No	NA		63%
Clovis Torres Junior	Information Disclosure Committee	C Member	Lawyer	7/18/2011	Undetermined
General Consultant and Compliance Director	NA NA		NA		100%
423.522.235-04	Information Disclosure Committee		09/09/1967	11/01/2013	
Eduardo Cesar Pasa	Comptroller Committee	Coordinator	Bank employee	04/29/2015	Until 2017 General Ordinary Meeting
NA	No				100%
442.810.487-15	Governance and Sustainability Committee	3	08/20/1954	04/29/2015	
Eduardo de Oliveira Rodrigues Filho	Finance Committee	Member	Engineer	04/29/2015	Until 2017 General Ordinary Meeting

Table of Contents

442.810.487-15	Governance and Sustainability Committee	3	08/20/1954	04/29/2015	
Fernando Jorge Buso Gomes	Finance Committee	Member	Bank employee	04/29/2015	Until 2017 General Ordinary Meeting
Governance and Sustainability Committee coordinator; member of the Executive Development Committee and permanent member of Vale s Board of Directors.	No				80%
370.624.177-34	Governance and Sustainability Committee, Executive Development Committee	NA	06/06/1956	04/29/2015	
Fernando Jorge Buso Gomes	Finance Committee	Member	Bank employee	04/29/2015	Until 2017 General Ordinary Meeting
Governance and Sustainability Committee coordinator; member of the Executive Development Committee and	No				100%

Table of Contents

permanent member of Vale s Board of Directors.					
084.489.987-90	NA	NA	08/30/1979	04/29/2015	
Gueitiro Matsuo Genso	Strategic Committee	Member	Bank employee	04/29/2015	Until General Shareholders Meeting in 2017
Chairman of the Board of Directors. He has been a member of the Board of Directors since 2015	No				100%
636.831.808-20	NA	4	09/29/1946	04/29/2015	
Luciano Siani Pires	Risk Management Executive Committee	Permanent Member	Mechanical Engineer	07/25/2012	Undetermined
Executive Director of Finance and Investor Relations and member of the Disclosure Committee	No				100%
013.907.897-56			02/10/1970	08/01/2012	

Table of Contents

Management Executive Committee					
250.319.028-68	NA	NA	10/06/1951	04/29/2015	
Marcel Juviniano Barros	Executive Development Committee (since 2015)	Member	Bank employee	04/29/2015	Until General Shareholders Meeting in 2017
Permanent member of Vale s Board of Directors	No				100%
092.364.177-79	NA	NA	10/23/1981	04/29/2015	
Moacir Nachbar Junior	Comptroller Committee	Member	Bank employee	04/29/2015	Until General Shareholders Meeting in 2017
Alternate Member of Vale s Board of Directors		No		04/29/2015	100%
212.466.706-82	Strategic Committee		06/22/1953	03/28/2013	
Murilo Pinto de Oliveira Ferreira	Strategic Committee	Permanent Member	Business Manager	04/29/2015	Undetermined
Vale s CEO and Permanent Member and Coordinator of the Disclosure Committee		No			100%

Table of Contents

Oscar Augusto Camargo Filho	Strategic Committee	Coordinator	Attorney	04/29/2015	Until General Shareholders Meeting in 2017
Permanent member of Vale s Board of Directors and member of the Development Committee	Executive Development Committee				100%
030.754.948-87	Strategic Committee	7	03/09/1938	04/29/2015	
Oswaldo Mário Pêgo de Amorim Azevedo	Comptroller Committee	Member	Industrial Engineer	04/29/2015	Until General Shareholders Meeting in 2017
Deputy member of Vale s Supervisory Board	No				100%
295.039.298-90	NA	NA		04/29/2015	
Ricardo Simonsen	Governance and Sustainability Committee	Independent Member	Mechanical Engineer		

Table of Contents

NA	Yes	(i) Not currently bound to Vale, except for his position as member of the Committee or eventual non-relevant participation in Vale s capita or on in investment in bonds issued by the company, with financial independence from Vale s compensation; (ii) He was not an employee or administrator or the Company (or any of its subsidiaries_ or any of its, direct or indirect, shareholders, or, still, any, direct or indirect, representative of controlling shareholders, for at least 3 (three) years; (iii) He does not provide, purchase, or offer (negotiate), directly or indirectly, services and/or products to the Company at a scale that is relevant for a member of the Committee or for the Company; (iv) He is not bound to controlling shareholders, members of the control groul or of any group with relevant staje, spouse or up to second degree relative of theirs, or is in anyway linked to entities related to the controlling companies; (v) He is not a spouse of up to second degree relative on any of Vale s managers or directors; (vi) He was not a partner, in the last 3 (three) years, of any auditing first that audits or has audit Vale within the same	88%

			period; and; (vii) (viii) He is not a member of a nonprofit entity that is the recipience ot significant financial resourncces from Vale or frmo any of its related parties.		
BA 783304	NA	NA	10/14/1964	12/07/2015	NA
Roberto Moretzsohn 691.554.107-15	Risk Management Executive Committee	Member	Civil Engineer	12/07/2015	12/07/2017
Roger Allan Downey	Risk Management Executive Committee	Member	Administrator	11/14/2014	Undetermined

Table of Contents

623.291.626-34	NA		04/01/1967	11/14/2014	
Rogério Tavares Nogueira	Disclosure Committee	Member	Engineer	01/01.2014	Undetermined
Director of Vale s Office of the Comptroller		No			100%
934.316.517-04	N/A		08/04/1967	12/07/2015	
Tatiana Boavista Barros Heil	Finance Committee	Member	Chemical Engineering	04/29/2015	Until the 2017 General Ordinary Meeting
Member of the Executive Development Committee (since 2015)		No			67%
028.694.677-70	Finance Committee	NA	05/01/1974	04/29/2015	
João Henrique Moraes	Ethics Committee	Member	Engineer	11/01/2013	Undetermined
Vale s Ombudsman					50%
497.955.626-49	NA		07/28/1962	06/03/2014	
Ricardo Henrique Baras	Ethics Committee	Member	Business Manager	11/01/2013	Undetermined

Table of Contents

Audit Department	NA	No			100%
[redacted]					
008.522.637-83	NA	NA	01/22/1972	05/06/2016	
[redacted]					

Table of Contents

Professional background/Statement of Convictions/Independence Criterion

Arthur Prado Silva

991.897.047-20

Mr. Arthur Prado Silva is not an independent member of the Governance and Sustainability Committee. For additional information, since Mr. Arthur Prado Silva is a member of the Board of Directors, please refer to item 12.5/6 this Reference Form.

Clovis Torres Junior

423.522.235-04

Mr. Clovis Torres Junior is not an independent member of the Disclosure Committee.

Clovis Torres Junior

423.522.235-04

Mr. Clovis Torres Junior is not an independent member of the Ethics Committee.

Eduardo Cesar Pasa

541.035.920-87

Mr. Eduardo Cesar Pasa is not an independent member of the Comptroller s Office.

Eduardo de Oliveira Rodrigues Filho

442.810.487-15

Mr. Eduardo de Oliveira Rodrigues Filho is not an independent member of the Finance Committee. For additional information, since Mr. Eduardo de Oliveira Rodrigues Filho is a member of the Board of Directors, please refer to item 12.5/6 this Reference Form.

Eduardo de Oliveira Rodrigues Filho

442.810.487-15

Mr. Eduardo de Oliveira Rodrigues Filho is not an independent member of the Governance and Sustainability Committee. For additional information, since Mr. Eduardo de Oliveira Rodrigues Filho is a member of the Board of Directors, please refer to item 12.5/6 this Reference Form.

Fernando Jorge Buso Gomes

370.624.177-34

Table of Contents

Mr. Fernando Jorge Buso Gomes is not an independent member of the Finance Committee. For additional information, since Fernando Jorge Buso Gomes is a member of the Board of Directors, please refer to item 12.5/6 this Reference Form.

Fernando Jorge Buso Gomes

370.624.177-34

Mr. Fernando Jorge Buso Gomes is not an independent member of the Governance and Sustainability Committee. For additional information, since Fernando Jorge Buso Gomes is a member of the Board of Directors, please refer to item 12.5/6 this Reference Form.

Fernando Jorge Buso Gomes

370.624.177-34

Mr. Fernando Jorge Buso Gomes is not an independent member of the Executive Development Committee. For additional information, since Fernando Jorge Buso Gomes is a member of the Board of Directors, please refer to item 12.5/6 this Reference Form.

Gilmar Dalilo Cezar Wanderley

084.489.987-90

Mr. Gilmar Dalilo Cezar Wanderley is not an independent member of the Finance Committee.

Gueitiro Matsuo Genso

624.201.519-68

Mr. Gueitiro Matsuo Genso is not an independent member of the Strategic Committee. For additional information, since Mr. Gueitiro Matsuo Genso is a member of the Board of Directors, please refer to item 12.5/6 this Reference Form.

Luciano Galvão Coutinho

Mr. Luciano Galvão Coutinho is not an independent member of the Strategic Committee. For additional information, since Mr. Luciano Galvão Coutinho is a member of the Board of Directors, please refer to item 12.5/6 this Reference Form.

Luciano Siani Pires

013.907.897-56

Mr. Luciano Siani Pires is not an independent member of the Risk Management Executive Committee. For additional information, since Mr. Luciano Siani Pires is a member of the Board of Directors, please refer to item 12.5/6 this Reference Form.

Luciano Siani Pires

013.907.897-56

Mr. Luciano Siani Pires is not an independent member of the Disclosure Committee. For additional information, since Mr. Luciano Siani Pires is a member of the Board of Directors, please refer to item 12.5/6 this Reference Form.

Luiz Carlos Trabuco Cappi

250.319.028-68

Table of Contents

Mr. Luiz Carlos Trabuco Cappi is not an independent member of the Strategic Committee.

Marcel Juviniano Barros

029.310.198-10

Mr. Marcel Juviniano Barros is not an independent member of the Executive Development Committee. For additional information, since Mr. Marcel Juviniano Barros is a member of the Board of Directors, please refer to item 12.5/6 this Reference Form.

Marcos Paulo Pereira da Silva

092.364.177-79

Mr. Marcos Paulo Pereira da Silva is not an independent member of the Comptroller Committee.

Moacir Nachbar Junior

062.947.708-66

Mr. Moacir Nachbar Junior is not an independent member of the Comptroller Committee. For additional information, since Mr. Moacir Nachbar Junior is a member of the Board of Directors, please refer to item 12.5/6 this Reference Form.

Murilo Pinto de Oliveira Ferreira

212.466.706-82

Mr. Murilo Pinto de Oliveira Ferreira is not an independent member of the Disclosure Committee. For additional information, since Mr. Murilo Pinto de Oliveira Ferreira is a member of the Board of Directors, please refer to item 12.5/6 this Reference Form.

Murilo Pinto de Oliveira Ferreira

212.466.706-82

Mr. Murilo Pinto de Oliveira Ferreira is not an independent member of the Strategic Committee. For additional information, since Mr. Murilo Pinto de Oliveira Ferreira is a member of the Board of Directors, please refer to item 12.5/6 this Reference Form.

Oscar Augusto Camargo Filho

030.754.948-87

Mr. Oscar Augusto Camargo Filho is not an independent member of the Strategic Committee. For additional information, since Mr. Oscar Augusto Camargo Filho is a member of the Board of Directors, please refer to item 12.5/6 this Reference Form.

Oscar Augusto Camargo Filho

030.754.948-87

Mr. Oscar Augusto Camargo Filho is not an independent member of the Executive Development Committee. For additional information, since Mr. Oscar Augusto Camargo Filho is a member of the Board of Directors, please refer to item 12.5/6 this Reference Form.

Oswaldo Mario Pêgo de Amorim Azevedo

005.065.327-04

Table of Contents

Oswaldo Mario Pêgo de Amorim Azevedo is not an independent member of the Comptroller Office. For additional information, whereas Mr. Oswaldo Mario Pêgo de Amorim Azevedo is a member of the Supervisory Board, see item 12.5/6 this reference form.

Ricardo Rodrigues Morgado

295.039.298-90

Mr. Ricardo Rodrigues Morgado is not an independent member of the Governance and Sustainability Committee.

Richard Simonsen

733.322.167-91

Mr. Ricardo Simonsen is not an independent member of the Governance and Sustainability Committee. The determination of independence was due to the fact that: (i) he does not have any link Vale, except for the position of member of the Committee or possible non-relevant stake in Vale s capital or in investments in bonds issued by Vale; (ii) he has not been an employee or manager at Vale or at its subsidiaries or for direct or indirect controlling shareholders for at least 3 (three) years; (iii) he does not provide, purchase, offers or negotiates, directly or indirectly, services and/or products to Vale at a relevant scale; (iv) he is bound to any controlling shareholder, member of the control group or of any other group with relevant stake, spouse or relative up to the second degree or linked to entities related to the controlling companies; (v) he is not the spouse or relative up to the second degree of any director or manager at Vale; (vi) he is not, and he has not been in the last 3 (three) years, a partner of and audit firm that audits, or has audited, Vale in this same period; and (x) he is not a member of non-profit entity that receives significant financial resources from Vale or its related parties; and (xi) he is not financially dependent on the compensation that shall come to be granted by Vale.

Jennifer Hooper

BA 783304

Ms. Jennifer Hooper is not an independent member of the Risk Management Executive Committee.

Roberto Moretzsohn

691.554.107-15

Mr. Roberto Moretzsohn is not an independent member of the Risk Management Executive Committee.

Roger Allan Downey

623.291.626-34

Mr. Roger Allan Downey is not an independent member of the Risk Management Executive Committee. For additional information, since Mr. Roger Allan Downey is a member of the Board of Directors, please refer to item 12.5/6 this Reference Form.

Rogério Tavares Nogueira

882.737.416-72

Mr. Rogério Tavares Nogueira is not an independent member of the Disclosure Committee.

Sonia Zagury

934.316.517-04

Ms. Sonia Zagury is not an independent member of the Risk Management Executive Committee.

Table of Contents

Tatiana Boavista Barros Heil

028.694.677-70

Ms. Tatiana Boavista Barros Heil is not an independent member of the Finance Committee.

Tatiana Boavista Barros Heil

028.694.677-70

Ms. Tatiana Boavista Barros Heil is not an independent member of the Executive Development Committee.

João Henrique Moraes

875.353.197-34

Mr. João Henrique Moraes is not an independent member of the Ethics Committee.

Edécio Ribeiro Brazil

497.955.626-49

Mr. Edécio Ribeiro Brazil is not an independent member of the Ethics Committee.

Ricardo Henrique Baras

103.564.968-30

Mr. Ricardo Henrique Baras is not an independent member of the Ethics Committee.

Andre Luiz da Rocha Figueiredo

008.522.637-83

Mr. Andre Luiz da Rocha Figueiredo is not an independent member of the Disclosure Committee.

Table of Contents

12.9 Existence of relationship (as a spouse or significant other) or kinship to the second degree related to managers of the company, entities controlled by the Company, and controlling shareholders

Justification for not completing the chart:

Each and every Member of the Board of Directors, Executive Board and Supervisory Board of Vale have declared, individually for all lawful purposes, that he or she is not related (as spouse, or significant other) or has any other kindred relationship to the second degree to (i) other managers of Vale; (ii) managers of companies controlled directly or indirectly by Vale; (iii) Vale s direct or indirect controlling shareholders; and (iv) the members of management of Vale s direct or indirect controlled entities.

In addition, all members of the Board of Directors, the Executive Board and of the Supervisory Board of companies controlled directly or indirectly by Vale have declared individually for all lawful purposes that the y have no conjugal or stable union or kinship to the second degree with entities controlled directly or indirectly by Vale.

Table of Contents

12.10 Subordination, rendering of services or control relationships the between directors/officers, entities controlled by the Company, controlling shareholders, and others

Identification	CPF/CNPJ	Relationship between Administrator and Related Person	Type of Related Person
Position/Role			
Fiscal Year 1659: 12/31/2015			
Issuer s Administrator			
Arthur Prado Silva	991.897.047-20	Subordination	Indirect controlling company
Member of the Board			
Related person			
Caixa de Previdência dos Funcionários do Banco do Brasil - PREVI.	33.754.482/0001-24		

Notes

Mr. Arthur Prado Silva is the Executive Manager of Caixa de Previdência dos Funcionários do Banco do Brasil - PREVI., which holds indirect participation in the Company through Litel Participações S.A., which, in turn, is a shareholder and member of Valepar S.A. s control block, controlling shareholder of the Company.

Identification	CPF/CNPJ	Type of relationship between administrator and related person	Type of related person
Position/Role			
Fiscal year 12/31/2014			
Issuer s Administrator			
Arthur Prado Silva	991.897.047-20	Subordination	Indirect Controller
Director			
Related person			
Caixa de Previdência dos Funcionários do Banco do Brasil - PREVI.	33.754.482/0001-24		

Table of Contents

Note

Mr. Arthur Prado Silva is the Executive Manager of Caixa de Previdência dos Funcionários do Banco do Brasil - PREVI., which holds indirect participation in the Company through Litel Participações S.A., which, in turn, is a shareholder and member of Valepar S.A. s control block, controlling shareholder of the Company.

Identification	CPF/CNPJ	Type of relationship between administrator and related person	Type of related person
Position/Role			
Fiscal year 12/31/2013			
Issuer s Administrator			
Arthur Prado Silva	991.897.047-20	Subordination	Indirect Controller
Director			
Related person			
Caixa de Previdência dos Funcionários do Banco do Brasil - PREVI.	33.754.482/0001-24		

Note

Mr. Arthur Prado Silva is the Executive Manager of Caixa de Previdência dos Funcionários do Banco do Brasil - PREVI., which holds indirect participation in the Company through Litel Participações S.A., which, in turn, is a shareholder and member of Valepar S.A. s control block, controlling shareholder of the Company.

Identification	CPF/CNPJ	Type of relationship between administrator and related person	Type of related person
Position/Role			
Fiscal year 12/31/2015			
Issuer s Administrator			
Victor Guilherme Tito	044.878.356-82	Subordination	Indirect Controller
Director			
Related person			
Banco Nacional de Desenvolvimento Econômico e Social - BNDES	33.657.248/0001-89		

Table of Contents

Note

Mr. Victor Guilherme Tito is employee of BNDES.

Identification	CPF/CNPJ	Type of relationship between administrator and related person	Type of related person
Position/Role			
Fiscal year 12/31/2014			
Issuer s Administrator			
Victor Guilherme Tito	044.878.356-82	Subordination	Indirect Controller
Director			
Related person			
Banco Nacional de Desenvolvimento Econômico e Social - BNDES	33.657.248/0001-89		

Note

Mr. Victor Guilherme Tito is an employee of BNDES.

Identification	CPF/CNPJ	Type of relationship between administrator and related person	Type of related person
Position/Role			
Fiscal year 12/31/2013			
Issuer s Administrator			
Victor Guilherme Tito	044.878.356-82	Subordination	Indirect Controller
Director			
Related person			
Banco Nacional de Desenvolvimento Econômico e Social - BNDES	33.657.248/0001-89		

Note

Mr. Victor Guilherme Tito is an employee of BNDES.

Table of Contents

12.11 Agreements, including insurance policies for the payment or reimbursement of expenses incurred by directors/officers

Vale maintains a global coverage liability insurance policy for Directors and Administrators with a group of insurers lead by Zurich Insurance, Plc, through payment of a premium of US$ 230,981.77, which was in effect between February 28, 2015 and February 29, 2016, and with total indemnity limit corresponding to US$ 150 million. Said policy was extended to May 31, 2016, in exchange for the payment of an additional premium in the amount of US$ 307,745.71. This insurance covers members of the Board of Directors, Executive Board, Supervisory Board, and any other body mentioned in the Bylaws, as well as certain employees at the management and strategic levels, in both the Company and its subsidiaries (collectively referred to as the Insured). The policy covers financial losses resulting from claims against the Insured for acts or omissions in the exercise of their functions of employment. The policy, in addition to contemplating the repair of damages caused to third parties, Vale, and its controlled companies brought by government agencies, also covers agreements previously authorized by the insurer for the purpose of bringing to close judicial or administrative suits. In addition, the policy provides coverage for payment of defense costs of the Insured, if and when incurred. In addition to those coverage mentioned above, the insurance provides additional guarantees for liability cases that may affect spouses, heirs, successors, legal representatives, and persons designated by Vale to act as managers of external entities.

Table of Contents

12.12 Vale s Corporate Governance Practices and the Brazilian Institute of Corporate Governance IBGC

According to the Brazilian Institute of Corporate Governance (IBGC), corporate governance is the system by which companies are directed and monitored, including the relationships among shareholders, board of directors, directors, independent auditors, and fiscal board. Basic principles guiding this practice are: (i) transparency; (ii) equity; (iii) accountability; and (iv) corporate responsibility.

The principle of transparency means that the management should engage the desire to inform, not only the company s financial performance, but also other factors (although intangible) that guide corporate actions. Equity means just and egalitarian treatment or of all minority groups, collaborators, users, suppliers, or creditors. Accountability, in turn, is characterized by the accountability related to acts of agents of corporate governance appointed, with full responsibility held by those engaged in the acts. Lastly, corporate responsibility represents a broader view of corporate strategy, including considerations of social and environmental nature in the definition of businesses and operations.

From corporate governance practices recommended by the IBGC in its Code of Best Practices of Corporate Governance, the Company adopts, including, the following:

- non-accumulation of the positions of chairman of the Board of Directors and President in the same person;

- clear nature of the By-Laws regarding the following: (i) competences of the Board of Directors and the executive Board; and (ii) system for voting, appointment, and removal and term of members of the Board of Directors and Executive Board; and

- transparency in the disclosure of management annual reports.

- policy to disclose information that governs the disclosure of information representing relevant acts or facts about Vale and its subsidiaries and, that elects our Executive Director of Investor Relations as the main responsible for the disclosure of information;

- policy to negotiate securities issued by Vale, approved by our Board of Directors; and

- code of ethics and conduct, to be complied with by all employees, executive directors, and members of the Board of Directors and its Committees, members of the Supervisory Board, contracted parties and anyone acting on behalf of Vale).

- A Global Anti-Corruption Policy, approved by Vale s Board of Directors and applicable to all the employees (temporary or not) and managers of the Company and its controlled companies, as well as all its vendors acting in the name of Vale and its controlled companies or in its interest. This policy sets forth the prohibition regarding some behaviors, as well as procedures to prevent and accuse corruption acts.

Table of Contents

12.13-Other relevant information

Information regarding conditions for effectiveness of the position of Ms. Jennifer Anne Maki (12.5/item 6)

On May 21, 2015, Ms. Jennifer Anne Maki was nominated by the Company Board of Directors to act as Executive Director, responsible for Vale s base metals area. On September 24, 2015, Ms. Jennifer Anne Maki nomination was approved by the Board of Directors, contingent on approval of her visa and authorization to work by the Ministry of Labor and Jobs.

Change of Chairman of the Board (item 12.5/6)

On February 24, 2016, the Board of Directors approved the appointment of Mr. Gueitiro Matsuo Genso, as Chairman of the Board of Directors of Vale, replacing Mr. Dan Conrad who left his role as Chairman of the Board of Directors, but remains a member of the Board of Directors.

Change of Chairman of the Board (item 12.5/6)

On April 13, 2016, Mr. Hiroyuki Kato resigned as a permanent member of Vale s Board of Directors, a position he has held since 2014. In view of the vacancy of the position in accordance with §10 of Art. 11 of Vale s bylaws, the Board of Directors approved on 27 April 2016, the appointment of Mr. Motomu Takahashi as a member of Vale s Board of Directors .

Information on approval of appointments for permanent and alternate members of the Board of Directors (item 12.5 / 6)

Given the vacant positions in the Board of Directors, pursuant to §10 of Art. 11 of Vale s bylaws, Mr. Alberto Ribeiro Guth was appointed as a permanent member and Mr. Arthur Prado Silva as Mr. Dan Conrado s alternate member, in meetings of the Board of Directors held on June 25, 2015, and July 29, 2015, respectively, both to fulfill the through the first General Meeting. These appointments were confirmed at the Ordinary and Extraordinary General Meetings held together on April 25, 2016, and they will be filled until the next Ordinary General Meeting in 2017.

Additional information on the participation of members of Company s board of directors and supervisory board in meetings held by these bodies (item 12.6)

Board of Directors	**Total Number of Meetings Held in the last fiscal year by the respective body since the**	**% Participation of member in meetings held after the investiture**

	Administrator took office	
Alberto Ribeiro Guth	8	100%
Arthur Prado Silva	7	0%
Lúcio Azevedo	10	80%
Victor Guilherme Tito	10	70%
Luciano Galvão Coutinho	10	0%
Eduardo de Oliveira Rodrigues Filho	10	0%
Oscar Augusto Camargo Filho	10	100%
Yoshitomo Mishimtsu	10	90%
Motomu Takahashi	Not applicable	Not applicable

Table of Contents

Luiz Mauricio Leuzinger	10	0%
Moacir Nachbar Júnior	10	10%
Sergio Alexandre Figueiredo Clemente	10	80%
Gilberto Antonio Vieira	10	0%
Gueitiro Matsuo Genso	10	90%
Robson Rocha	10	0%
Francisco Ferreira Alexandre	10	0%
Dan Antonio Marinho Conrado	10	100%
Carlos Roberto de Assis Ferreira	10	10%
Tarcisio José Massote Godoy	10	100%
Marcel Juviniano Barros	10	90%
Fernando Jorge Buso Gomes	10	100%
Marcelo Gasparino da Silva	Not applicable	Not applicable

Advisory Board	**Total Number of Meetings Held in the last fiscal year by the respective body since member took office**	**% Participation of member in meetings held after the investiture**
Oswaldo Mario Pêgo de Amorim Azevedo	10	0%
Sandro Kohler Marcondes	Not applicable	Not applicable
Marcelo Amaral Moraes	10	100%
Aníbal Moreira dos Santos	10	100%
Sergio Mamede Rosa do Nascimento	Not applicable	Not applicable
Raphael Manhães Martins	10	100%
Paulo José dos Reis Souza	Not applicable	Not applicable
Paula Bicudo de Castro Magalhães	Not applicable	Not applicable
Julio Sergio de Souza Cardozo	Not applicable	Not applicable

Table of Contents

Additional information on the participation of Company s committee members in meetings held by these bodies (item 12.8)

Strategic Committee	Total Number of Meetings Held in the last fiscal year by the respective body since committee member took office	% Participation of member in meetings held after the investiture
Murilo Pinto de Oliveira Ferreira	1	100%
Gueitiro Matsuo Genso	1	100%
Luiz Carlos Trabuco Cappi	1	100%
Oscar Augusto Camargo Filho	1	100%
Luciano Galvão Coutinho	1	100%

Finance Committee	Total Number of Meetings Held in the last fiscal year by the respective body since committee member took office	% Participation of member in meetings held after the investiture
Gilmar Dalilo Cezar Wanderley	15	100%
Fernando Jorge Buso Gomes	15	80%
Eduardo de Oliveira Rodrigues Filho	15	93%
Tatiana Boavista Barros Heil	15	67%

Governance and Sustainability Committee	Total Number of Meetings Held in the last fiscal year by the respective body since committee member took office	% Participation of member in meetings held after the investiture
Fernando Jorge Buso Gomes	8	88%
Arthur Prado	8	63%
Eduardo de Oliveira Rodrigues Filho	8	88%
Ricardo Rodrigues Morgado	8	88%
Richard Simonsen	8 88%	88%

Table of Contents

Executive Development Committee	Total Number of Meetings Held in the last fiscal year by the respective body since committee member took office	% Participation of member in meetings held after the investiture
Oscar Augusto Camargo Filho	1	100%
Marcel Juviniano Barros	1	100%
Fernando Jorge Buso Gomes	1	100%
Tatiana Boavista Barros Heil	1	100%

Comptroller Committee	Total Number of Meetings Held in the last fiscal year by the respective body since committee member took office	% Participation of member in meetings held after the investiture
Eduardo Cesar Pasa	4	100%
Moacir Nachbar Junior	4	100%
Oswaldo Mario Pêgo de Amorim Azevedo	4	100%
Marcos Paulo Pereira da Silva	4	75%

Table of Contents

Disclosure Committee	Total Number of Meetings Held in the last fiscal year by the respective body since committee member took office	% Participation of member in meetings held after the investiture
Luciano Siani Pires	1	100%
Murilo Pinto de Oliveira Ferreira	1	100%
Clovis Torres Junior	1	100%
Rogério Tavares Nogueira	1	100%
Andre Luiz da Rocha Figueiredo	Not applicable	Not applicable

Executive Committee for Risk Management	Total Number of Meetings Held in the last fiscal year by the respective body since committee member took office	% Participation of member in meetings held after the investiture
Luciano Siani Pires	1	100%
Roger Allan Downey	1	0%
Roberto Moretzsohn	1	100%
Sonia Zagury	1	100%
Jennifer Hooper	Not applicable	Not applicable

Ethics Committee	Total Number of Meetings Held in the last fiscal year by the respective body since committee member took office	% Participation of member in meetings held after the investiture
Clovis Torres Junior	2	50%
João Henrique Moraes	2	50%
Edécio Ribeiro Brazil	2	100%
Ricardo Henrique Baras	2	100%

Table of Contents

Additional information to item 12.10

Mr. Lucio Azevedo and Mr. Carlos Roberto de Assis Ferreira, permanent and alternate members of the Board of Directors, respectively, reported that, although they are Vale employees, they were assigned to the Sindicato dos Trabalhadores em Empresas Ferroviárias dos Estados do Maranhão, Pará e Tocantins and to the Sindicato Metabase de Itabira e Região, respectively, pursuant to the current legislation, and, thus, they have declared, for all purposes of law, that there is no relationship of service or control between them and (i) any direct or indirect company controlled by Vale; (ii) the direct or indirect controlling shareholders of Vale; or (iii) suppliers, customers, debtors or creditors relevant to Vale, its subsidiaries or controlling companies.

Information on general meetings quorums

Following is information on general shareholders meetings held in the last three years and during current fiscal until the date of annual filing of this Reference Form:

Date:	04/25/2016
Type of General Meeting	Ordinary and Extraordinary
Second call	No
Quorum	The meeting was held on the first call with the presence of shareholders representing 51.52% of our voting capital.

Date:	105/13/2015
Type of General Meeting	Extraordinary
Second call	Yes
Quorum	The meeting was held on the second call with the presence of shareholders representing 54.68% of our voting capital.

Date:	04/17/2015
Type of General Meeting	Ordinary
Second call	No
Quorum	The meeting was held on the second call with the presence of shareholders representing 55.88% of our voting capital.

Table of Contents

Date:	12/23/2014
Type of General Meeting	Extraordinary
Second call	No
Quorum	The meeting was held with the presence of shareholders representing 55.2% of our voting capital.

Date:	05/09/2014
Type of General Meeting	Extraordinary
Second call	Yes
Quorum	The meeting was held on with the presence of shareholders representing 52% of our voting capital.

Date:	04/17/2014
Type of General Meeting	Ordinary
Second call	No
Quorum	The meeting was held on with the presence of shareholders representing 56% of our voting capital.

Date:	05/07/2013
Type of General Meeting	Extraordinary
Second call	Yes
Quorum	The meeting was held on with the presence of shareholders representing 57% of our voting capital.

Table of Contents

Date:	04/17/2013
Type of General Meeting	Ordinary
Second call	No
Quorum	The meeting was held with the presence of shareholders representing 61.24% of our voting capital.

Executive positions occupied in other Companies or Entities by Members of the Board of Directors of the Company

Under the terms set forth in item 4.4.1 in the Trading Regulation of Corporate Governance Level 1 by BM&FBOVESPA S.A. Bolsa de Valores, Mercadorias e Futuros, find below a list of positions currently occupied by members of the Board of Directors of Vale S.A. at the Board of Directors, Supervisory Board, Committees and executive bodies of other companies or entities:

Member of the Board: Gueitiro Matsuo Genso (Chairman)

COMPANY	POSITION
Valepar S.A.	Chief Executive Officer
PREVI Caixa de Previdência dos Funcionários do Banco do Brasil	Chief Executive Officer
BB Mapfre SH1 Participações S.A.	Effective Member of the Supervisory Board
Mapfre BB SH2 Participações S.A.	Effective Member of the Supervisory Board

Member of the Board: Dan Antonio Marinho Conrado (Permanent)

COMPANY	POSITION
Valepar S.A.	Chairman of the Board of Directors
Mapfre BBSH2 Participações S.A.	Deputy Member of the Board of Directors

Member of the Board: Fernando Jorge Buso Gomes (Permanent)

COMPANY	POSITION
Valepar S.A.	Permanent Board of Directors
President and Investor s relations Director	Bradespar S.A.
Banco Bradesco BBI S.A.	Director
Sete Brasil S.A.	Member of the Board of Directors

Table of Contents

Smartia Corretora de Seguros S.A.	Chairman of the Board of Directors
SMR Grupo de Investimentos e Participações S.A.	Chairman of the Board of Directors
BCPAR S.A.	Member of the Board of Directors
2b Capital S.A.	Member of the Board of Directors
LOG Commercial Properties S.A.	Member of the Board of Directors

Member of the Board: Marcel Juviniano Barros (Permanent)

COMPANY	POSITION
PREVI Caixa de Previdência dos Funcionários do Banco do Brasil	Security Director
Valepar S.A.	Permanent member of the Board of Directors
PRI - *Principles for Responsible Investment* UN	Member of the Board

Member of the Board: Oscar Augusto Camargo Filho (Permanent)

COMPANY	POSITION
CWH Consultoria Empresarial	Managing Director

Member of the Board: Lucio Azevedo (Permanent)

ENTITY	POSITION
Sindicato dos Trabalhadores em Empresas Ferroviárias dos Estados do Maranhão, Pará e Tocantins	President

Member of the Board: Luciano Galvão Coutinho (Permanent)

COMPANY	POSITION
Banco Nacional de Desenvolvimento Econômico e Social BNDES	Managing Director
Fundação Dom Cabral	Member of the International Consulting Board
Fundo Nacional de Desenvolvimento Científico e Tecnológico	Member of the Board
Fundação Nacional da Qualidade	Member of the Curator Board
Conselho Nacional de Desenvolvimento Industrial	Member of the International Consulting Board
Petroleo Brasileiro S.A.- Petrobras	Member of the Board

Table of Contents

Member of the Board: Sergio Alexandre Figueiredo Clemente (Permanent)

COMPANY	POSITION
Valepar S.A.	Vice-Chairman of the Board of Directors
Banco Bradesco S.A.	Executive Vice-President Member of the Integrated Risk Management and Capital Allocation Committee Member of the Sustainability Committee Member of the Ethics Committee Member of the Internal Controls & Compliance Committee
Associação Brasileira das Companhias Abertas - ABRASCA	Member of the Capital Markets Committee
2b Capital S.A.	Chairman of the Board of Directors
Aicaré Holding Ltda	Director
Alvorada Administrador de Cartões Ltda	Director
Alvorada Companhia Securitizadora de Créditos Financeiros	Director
Alvorada Serviços e Negócios Ltda.	Director
Amapari Holdings S.A.	Director
Andorra Holdings S.A.	Director
Antares Holdings S.A.	Director
Aporé Holdings S.A.	Director
Aquarius Holdings S.A.	Director
Aranaú Holdings S.A.	Director
Baíra Holdings S.A.	Director
Banco Alvorada S.A.	Director
Banco Bradesco Argentina S.A.	President
Banco Bradesco BBI S.A.	Vice-President Director
Banco Bradesco BERJ S.A.	Vice-President Director
Banco Boavista Interatlântico S.A.	Director
Banco Bradescard S.A.	Vice-President Director
Banco Bradesco Cartões S.A.	Vice-President Director
Banco Bradesco Europa S.A.	Member of the Board of Directors
Banco Bradesco Financiamentos S.A.	Vice-President Director
Banco CBSS S.A.	Director
Baneb Corretora de Seguros S.A.	Vice-President Director
Bankpar Brasil Ltda.	Vice-President Director
Bankpar Consultoria e Serviços Ltda.	Vice-President Director
Barinas Holdings S.A.	Director

Table of Contents

BBD Participações S.A.	Member of the Board of Directors
BCN Consultoria, Administração de Bens, Serviços e Publicidade Ltda.	Director
BEC Distribuidora de Títulos e Valores Mobiliários Ltda.	Vice-President Director
BEM Distribuidora de Títulos e Valores Mobiliários Ltda.	Vice-President Director
BF Promotora de Vendas Ltda.	Vice-President Director
BMC Asset Management Distribuidora de Títulos e Valores Mobiliários Ltda.	Director
BP Promotora de Vendas Ltda.	Vice-President Director
Bpar Corretagem de Seguros Ltda.	Vice-President Director
Bradescard Elo Participações S.A.	Director
Bradesco Administradora de Consórcio Ltda.	Vice-President Director
Bradesco Leasing S.A. Arrendamento Mercantil	Vice-President Director
Bradesco Securities Hong Kong Limited	Chairman of the Board of Directors
Bradesco Securities, Inc.	Chairman of the Board of Directors
Bradesco Securities UK Limited	Chairman of the Board of Directors
Bradesco Services Co., Ltd.	Vice-President Director
Bradescor Corretora de Seguros Ltda.	Vice-President Director
Bradespar S.A.	Director
Bradesplan Participações Ltda	Director
Bradport S.G.P.S. Sociedade Unipessoal Ltda.	Manager
BRAM Bradesco Asset Management S.A. Distribuidora de Títulos e Valores Mobiliários	Vice-President Director
Brasilia Cayman Investiments II Limited	Director
Brasilia Cayman Investiments III Limited	Director
Brumado Holdings Ltda.	Director
BSP Empreendimentos Imobiliários S.A	Member of the Strategic Committee
Caetê Holdings Ltda.	Director
Carson Holdings Ltda.	Director
Celta Holdings S.A.	Director
Cidade Capital Markets Ltd.	Director
Cidade de Deus Companhia Comercial de Participações	Member of the Board of Directors
Columbus Holdings S.A.	Director
Companhia Securitizadora de Créditos Financeiros Rubi	Director
Elba Holdings Ltda.	Director
Elvas Holdings Ltda.	Director
Embaúba Holdings Ltda.	Director
Everest Leasing S.A. Arrendamento Mercantil	Director
Fundação Bradesco	Member of the Management Board

Table of Contents

	Managing Director
Fundação Instituto de Moléstias do Aparelho Digestivo e da Nutrição	Member of the Board of Directors Managing Director
Ganant Corretora de Seguros Ltda.	Vice-President Director
Ibi Corretora de Seguros Ltda.	Vice-President Director
Imagra Imobiliária e Agrícola Ltda.	Vice-President Director
Japira Holdings S.A.	Director
Lecce Holdings Ltda.	Director
Lyon Holdings Ltda.	Director
Manacás Holdings Ltda.	Director
Manibu Holdings Ltda.	Director
Marselha Holdings S.A.	Director
Millenium Security Holdings Corp	Director
Miramar Holdings S.A.	Director
NCD Participações Ltda.	Managing Director
NCF Participações S.A.	Director
Nova Cidade de Deus Participações S.A.	Director
Nova Marília Administração de Bens Móveis e Imóveis Ltda.	Director
Nova Paiol Participações Ltda	Director
Promosec Companhia Securitizadora de Créditos Financeiros	Director
PTS Viagens e Turismo Ltda	Vice-President Director
Quixaba Empreendimentos e Participações Ltda	Director
Rubi Holdings Ltda.	Director
Serel Participações em Imóveis S.A.	Director
Settle Consultoria, Assessoria e Sistemas Ltda.	Director
ShopFácil Soluções em Comércio Eletrônico S.A.	Vice-President Director
STVD Holdings S.A.	Director
Tempo Serviços Ltda.	Vice-President Director
Tibre Distribuidora de Títulos e Valores Mobiliários Ltda.	Director
Tibre Holdings Ltda.	Director
Taíba Holdings Ltda.	Director
Tandil Holdings S.A.	Director
Tapajós Holdings Ltda.	Director
Titanium Holdings S.A.	Director
Top Clube Bradesco, Segurança, Educação e Assistência Social	Director

Table of Contents

Treviglio Holdings Ltda.	Director
União Participações Ltda.	Director
Varese Holdings Ltda.	Director
Veneza Empreendimentos e Participações S.a.	Director
Viareggio Holdings Ltda.	Director

Member of the Board: Alberto Ribeiro Guth (Effective)

COMPANY	POSITION HELD:
Via Varejo S.A.	Member of the Board of Directors
Centrais Elétricas de Santa Catarina S/A CELESC	Member of the Board of Directors
Angra Partners Gestão de Recursos Ltda.	Partner and Director
TG Participações SA	Member of the Board of Directors
Angra Infraestrutura Gestão de Informações Ltda.	Member of the Board of Directors
Estre Ambiental S.A.	Member of the Board of Directors
A Geradora Aluguel de Máquinas S.A.	Member of the Board of Directors
Aconcagua Investimentos e Participações Ltda.	Officer
Futuretel S.A.	Officer
Zain Participações S.A.	Officer
Neustift Participações Ltda.	Officer
Sul 116 Participações S.A.	Officer
Newtel Participações S.A.	Officer
Capinauá Empreendimentos e Participações S.A.	Officer
Invitel Legacy S.A.	Officer
Rio Barigui S.A.	Member of the Board of Directors

Member of the Board: Francisco Ferreira Alexandre (Deputy)

COMPANY	POSITION
BRF Previdência	Superintendent Director
Valepar S.A.	Deputy member of the Board of Directors

Member of the Board: Robson Rocha (Deputy)

COMPANY	POSITION
Valepar S.A.	Deputy member of the Board of Directors

Table of Contents

Member of the Board: Moacir Nachbar Junior (Deputy)

COMPANY	POSITION
2bCapital Participações Ltda.	Director
2bCapital S.A.	Director
BEC - Distribuidora de Títulos e Valores Mobiliários Ltda.	Managing Director
BEM - Distribuidora de Títulos e Valores Mobiliários Ltda.	Managing Director
Banco Bradesco S.A.	Executive Director Manager
Associação Brasileira das Companhias Abertas ABRASCA	Deputy member of the Managing Board
Fundação Bradesco	Member of *Mesa Regedora*
Fundação Instituto de Moléstias do Aparelho Digestivo e da Nutrição	Deputy member of the Board of Directors
Fundo Garantidor de Créditos FGC	Deputy member of the Consulting Board
Valepar S.A.	Permanent member of the Board of Directors
Banco Bradesco S.A.	Member of the Disclosure Committee
Banco Bradesco S.A.	Member of the Sustainability Committee
Banco Bradesco S.A.	Member of Internal Controls and Compliance Committee
Banco Bradesco S.A.	Member of Integrated Risk Management and Capital Allocation Committee
Banco Bradesco S.A.	Member of the Ethics Committee

Member of the Board: Gilberto Antonio Vieira (Deputy)

COMPANY	POSITION
Confederação Nacional dos Trabalhadores nas Empresas de Crédito	General Secretary
Cooperativa Habitacional ANABB Ltda.	Deputy member of the Board of Directors
Valepar S.A.	Deputy member of the Board of Directors

Member of the Board: Yoshitomo Nishimitsu (Deputy)

COMPANY	POSITION
Valepar S.A.	Deputy member of the Board of Directors
Mitsui & Co. (Brasil) S.A.	Managing Director of the Mineral Resources Division

Table of Contents

Member of the Board: Carlos Roberto de Assis Ferreira (Deputy)

COMPANY	POSITION
Sindicato Metabase de Itabira e Região	Director of Treasury

Member of the Board: Arthur Prado Silva (Alternate)

COMPANY	POSITION HELD:
Valepar S.A.	Member of the Board of Directors
Litel Participações S.A.	Permanent Member of the Board of Directors
Litela Participações S.A.	Permanent Member of the Board of Directors
LitelB Participações S.A.	Permanent Member of the Board of Directors
521 Participações S.A.	Permanent Member of the Board of Directors
Serra da Mesa SA - SEMESA	Permanent Member of the Board of Directors
CPFL Geração de Energia S.A.	Permanent Member of the Board of Directors
Companhia Energética Rio das Altas	Permanent Member of the Board of Directors
Companhia de Energia Elétrica da Bahia - Coelba	Alternate Member of the Board of Directors
Rio Grande Energia S.A.	Member of the Finance Committee

Table of Contents

Member of the Board: Marcelo Gasparino da Silva

COMPANY	POSITION HELD:
Eternit S.A.	Member of the Board of Directors Legal and Compliance Committee Coordinator
Centrais Elétricas Brasileiras S.A. - Eletrobras	Member of the Board of Directors
Eletropaulo Metropolitana Eletricidade de São Paulo S.A.	Member of the Board of Directors
Companhia Energética de Minas de Minas Gerais S.A. CEMIG	Member of the Board of Directors
Battistella ADM. 521 Participações S.A.	Member of the Board of Directors

Mr. **Tarcísio José Massote Godoy** and Mr. **Motomu Takahashi (Permanent Members of the Board)** are currently not members of the Board of Directors, the Supervisory Board, Committees or executive bodies in other companies or entities.

Information about the party responsible for Internal Audit

Name	Ricardo Henrique Baras
CPF	103.564.968-30
Age	48
Occupation	Business Administrator
Position	Non-statutory Internal Audit Director
Date of election	08/12/2013
Date of appointment	08/12/2013
Term of office	Undetermined
Other positions occupied in the Company	N/A
Professional Experience	Audit Director of Suzano Papel e Celulose S.A. (2009 to 2010) and Audit Director of Auditoria da Alcoa Alumínio S.A. (since 2010).

For information about the non-statutory advisory committees of the Board of Directors, see item 12.1 in this Reference Form.

Table of Contents

Information on the training of employee on the Code of Conduct

Starting in 2013, when Vale s Code of Ethics and Conduct was revised Vale, Vale started to provide annual training to their employees on the contents of the Code of Ethics.

In 2014, training was conducted through leadership, starting with the Executive Board, which presented the Code of Ethics to their direct reports, and so it went on for each level of the hierarchy until it reaches the operational level. At the end of the training, employees received a printed copy of the Code of Ethics and signed an agreement to comply with it. Vale has achieved over 90% adherence.

In 2015, Vale, in turn:

(i) held the Movement for Integrity - an event aimed at taking to all employees a message highlighting the importance of the Do the Right Thing value, focused on the Code of Ethics and Conduct and on the Global Anti-Corruption Program. The opening of the movement was attended by Vale s Chief Executive Officer, general consultant, and general ombudsman, who sent the message to the leaders that were in charge of sending the information to all employees. With the support of the Movement for Integrity, more than 70% of employees worldwide, have signed the agreement to comply with the terms of the Code of Ethics.

(ii) other initiatives were implemented to bring awareness of Vale s rule of ethical conduct, such as: Ethics Today , a bimonthly publication of controversial issues on ethics to be discussed at staff meetings; and the video that introduces the Code of Ethics and Conduct to new employees and new contractors.

(iii) promoted classroom training (on the Global Anticorruption Program) of members of areas considered priority for the mitigation of the risk of corruption (for example, those responsible for relations with government officials, outsourcing, donations, sponsorships, and investments in communities and acquisition of companies), which involved more than 2,700 participants in several countries where Vale operates (Australia, Brazil, Canada, China, Singapore, South Korea, United Arab Emirates, India, Indonesia, Japan, Malawi, Malaysia, Mozambique, New Caledonia, Oman and Taiwan)

(iv) developed online anticorruption and Code of Ethics and Conduct training that are mandatory for all employees (and which must be completed by the end of 2016).

For the first half 2016, more than 70 classroom training groups are planned for more than 3,000 employees working in priority areas in all Vale locations in Brazil. Additionally, in the same year, in addition to maintaining the Movement for Integrity and Ethics Today initiatives, it will also be available for employees an online training on the Code of Ethics and Conduct.

Information on external and internal complaints concerning the Code of Conduct and the improvements achieved because of complaints

In 2015, the Vale s Ombudsman received 1,653 complaints, of which 24% could not be cleared because they lacked enough information to investigate the facts reported or because they were ethics related issued, and, therefore, were outside the Ombudsman s scope.

Table of Contents

Valid complaints were cleared and 47% were confirmed, generating 1,409 corrective actions, including feedback to employees, changes in process, coaching, warnings, dismissals and termination of business relationships with companies involved.

In addition to corrective actions, improvements in the investigative process has led to improvements in the actions taken by Vale s Ombudsman, including the creation of the guidebook with recommendations to manage consequences, for example, whose aim was to help the manager define administrative actions (e.g.: advice, warning letter, terminations, etc.) resulting from investigations confirmed by the Ombudsman.

13.1 Description of the compensation policy, including Non-Statutory Boards

a. objectives of the compensation policy or practices

According to the provisions of Article 10, Paragraph 4 of the Bylaws of the Company, the overall and annual compensation for Company Managers is set at the Annual General Meeting, and takes into account their responsibilities, the time they dedicate to their functions, competence and professional reputation, and the market value of their services.

Vale is one of the largest diversified mining companies in the world, and one of the largest private companies in Latin America. It has operations in over 25 countries having shareholders on every continent, and employing around 74,098 employees and 34,410 subcontracted workers active in its operations, as of December 31, 2015.

Clearly, Vale is a global company of great complexity and magnitude, whose administration requires an in-depth understanding of its area of business and market, combined with total commitment.

As global company, Vale is aware that retaining and engaging the right professionals in strategic roles, especially Executive Directors, is critical for its success today, in the mid and long terms. As such, the market is always the benchmark, from the perspective of global competition, thus Vale takes into consideration, to determine managers compensation, compensation policies used by top mining companies, as well as from large global corporations from other industries.

Table of Contents

Thus, the goal of Vale s compensation policy is to attract, motivate, and retain its talents, and considers market practices at locations where the company operates, its alignment with company strategy in the short and long terms, its shareholder value, and business sustainability.

b. composition of compensation packages, indicating:

i. Description of the elements of the compensation packages and the objectives of each of them.

Executive Board

Fixed Compensation

Pro-labore. The compensation for the members of the Executive Board is made up exclusively of the payment of a fixed monthly fee; this fixed compensation is designed to remunerate the services of each board member, within their scope of responsibility as members of Vale s Executive Board. The overall annual compensation for the Managers, including the members of the Executive Board, the Statutory Board, the Fiscal Council and the advisory committees is set at the Annual General Meeting and distributed by the Executive Board.

Direct and indirect benefits. The members of the Executive Board do not have the right to direct or indirect benefits.

Participation on Committees. The members of the Executive Board do not have the right to remuneration for participation on committees.

Table of Contents

Variable Remuneration

The members of the Executive Board do not have the right to variable remuneration, including bonuses, profit sharing, participation in meetings, and commissions.

Post-employment Benefits

The members of the Executive Board do not have the right to post-employment benefits.

Benefits Resulting from the Termination of Holding a Position

The members of the Executive Board do not have the right to benefits resulting from the termination of holding a position.

Remuneration Based on Shares

The members of the Executive Board do not have the right to remuneration based on shares.

Fiscal Board

Table of Contents

Fixed Compensation

Pro-labore. The compensation for the members of the Fiscal Board is made up of a fixed monthly fee (honorarium), excluding benefits, representation monies, and profit shares. Members of the Fiscal Board are also entitled to refund for their costs with travelling and accommodation expenses incurred while performing their duties. Deputies are compensated when they undertake the function when a seat is vacant, or when the member of the board in question is absent or unable to exercise the function. The aim of the fixed compensation is to remunerate the services of each board member, within their scope of responsibility as members of the Company s Fiscal Board. The fees for Fiscal Board members are determined as a percentage of the average compensation to the Executive Directors.

Direct and Indirect Benefits. Members of the Fiscal Board do not have the right to direct or indirect benefits.

Participation on Committees. The members of the Fiscal Board do not have the right to remuneration for participation on committees.

Variable Remuneration

The members of the Fiscal Board do not have the right to variable remuneration, including bonuses, profit sharing, participation in meetings, and commissions.

Post-employment Benefits

The members of the Fiscal Board do not have the right to post-employment benefits.

Benefits Resulting from the Termination of Holding a Position

The members of the Fiscal Board do not have the right to benefits resulting from the termination of holding a position.

Table of Contents

Remuneration Based on Shares

The members of the Fiscal Board do not have the right to remuneration based on shares.

Table of Contents

Advisory Committees

Fixed Compensation

Pro-labore. The compensation for the members of the Executive Board Advisory Committees (Strategy Committee, Finance Committee, Executive Development Committee, Financial Control Committee, and Governance and Sustainability Committee) considers exclusively the payment of a fixed monthly fee (fees), except for committee members who are Vale Managers, who will not be eligible for compensation for sitting on the committees, as set forth in Paragraph 2 of Article 15 of Vale s Bylaws. The aim of the compensation is to remunerate each member s services within the scope of their responsibility as members of the Company s respective Advisory Committees. The compensation for Advisory Committee members is defined by the Board of Directors.

Direct and Indirect Benefits. Advisory committee members are not entitled to direct or indirect benefits.

Variable Remuneration

The members of the Advisory Committees do not have the right to bonuses, profit sharing, or commissions.

Post-employment Benefits

The members of the Advisory Committees do not have the right to post-employment benefits.

Table of Contents

Benefits Resulting from the Termination of Holding a Position

The members of the Advisory Committees do not have the right to benefits resulting from the termination of holding a position.

Remuneration Based on Shares

The members of the Advisory Committees do not have the right to remuneration based on shares.

Statutory Directors (Executive Board)

Fixed Compensation

Pro-labore. Statutory Directors are entitled to receive a fixed monthly compensation aiming to remunerate the services rendered by them within the scope of the individual responsibility attributed to each one managing the Company.

Direct and indirect benefits. Statutory Directors are entitled to a package of benefits that is also compatible with market practices, including private healthcare, hospital and dental care, private pension scheme and life insurance. Not only are the benefits in line with market practices, but they are also aimed at assuring the executives and their dependents peace of mind when it comes to fundamental issues such as healthcare.

Participation on Committees. Statutory Directors do not have the right to remuneration for participation on committees.

Variable compensation

Bonus. Statutory Directors are entitled to variable annual payment (bonus) based on the Company s earnings and defined by indicators and objectives, targets derived

474

Table of Contents

from the strategic plan, and the annual budget approved by the Executive Board. While assuring market competitiveness, the main aim of the bonus is to acknowledge an executive s contribution to the Company s performance and earnings.

Others. Statutory Directors do not have the right to variable compensation, profit sharing, participation in meetings, or commissions.

Post-employment benefits

Statutory Directors may have medical healthcare, hospital and dental care paid by the Company up to 24 months after their termination, in order to allow them to look for alternatives outside the corporative plan.

Benefits Resulting from the Termination of Holding a Position

The members of the Statutory Board do not have the right to benefits resulting from the termination of holding a position, except, however, as described in item 13.12 of this Reference Form, for eventual indemnity due to termination or no renewal of the employment agreement entered by and between these directors and the Company, provided that these events are a Company initiative. For more information, see item 13.12 in this Reference Form.

Compensation based on shares

Long-term Incentives ILP (Portuguese acronym) (by 2013, including) and Virtual Share Program PAV (starting in 2014)

The Long-term Incentives (ILP) represents a variable payment based on the Company s expected future performance aimed at retaining and engaging the Executives and aligning them with the future vision of the Company. The program was introduced in 2007 and the first payment was made in January 2010.

Table of Contents

Starting in 2014, the ILP was replaced by the Virtual Shares Program (PAV), whose basis of calculation is the basis of compensation received by Statutory Directors, and the parameters of this calculation will be pre-established for each hierarchical level in each of the countries where the Company operates. The program lasts for 4 years and not for 3 years, as described in the above paragraph. The program allows early gradual payments, starting in 2014. Thus, payment can be made in accrued tranches of 20% (at the end of the second year), 30% (at the end of the third year) and 50% (at the end of the fourth year), for as long as performance conditions for each year are reached, as set forth in PAV, that is, placement of Vale within a group comprised by other 12 companies of similar size (peer group). The payment metrics is the Total Shareholder Return (TSR) relative to the peer group, taking into consideration the businesses and region in which Vale operates and the influence of the Brazilian market s fluctuation. If Vale is at the top of this ranking, the calculated value is increased by 50%. This percentage is decreasing, and on the third place, the value is unchanged, and starting on the tenth position, and lower, there is no payment whatsoever.

For further details, see items 13.1 (b)(iii), (c), and (d) and 13.4 in this Reference Form.

Matching

Like the PAV (and the ILP replaced by PAV in 2014), *Matching* is a variable, long-term form of compensation based on the Company s expected performance. The plan s purpose is to encourage an owner s feeling , while also helping to retain executives and reinforce the sustainable performance culture. The plan was established in 2008, and was altered in 2014 for purposes of changing the calculation methodology to enter the plan, now considering for such calculation (i) the portion of the fixed compensation received by beneficiaries of this plan, and (ii) parameters predetermined for each hierarchic level and country where the Company operates.

There have been some adjustments to the Matching program for fiscal year 2016 for purposes of allowing the engagement of the executive to this program in years when the net bonus is not sufficient for investment in the program. In those years, the executive may (i) acquire Company shares during 12 months to use the program, in pre-established purchase windows, as well as (ii) engage in the program using previously held shares (provided that these shares are not bound to the current open cycles in the program), according to criteria and conditions that are set forth in the manual of the *Matching* 2016 program. Additionally, it is important to note that adherence to the program is currently voluntary for all Vale executives, except for the President and the Executive Officers, whose adherence and maintenance to the program is mandatory whenever the net bonus is sufficient for investment.

For more information, including the methodology for calculation used to determine the value of the compensation of beneficiaries under this Plan, see items 13.1(b)(iii), (c), and (d) and 13.4 in this Reference Form.

Table of Contents

Non-Statutory Board

The non-statutory directors are Company employees with a labor contract. These directors may hold global Corporate or business unit functions or regional or local corporate functions, or are responsible for operational systems or areas in the Company s different businesses.

Fixed Compensation

Pro-Labore. Non-Statutory Directors are entitled to a fixed monthly compensation based on the Company s organizational chart, which is aligned to market practices. The aim of the fixed salary is, as set out in the labor contract signed by each executive, to remunerate the services rendered within the scope of responsibility attributed to each one undertaking their respective duties within the company.

Direct and indirect benefits. Non-Statutory Directors are entitled to benefits compatible with market practices, including medical healthcare, hospital and dental care, private pension scheme (Valia) and life insurance. Not only are the benefits in line with market practices, but they are also aimed at assuring the executives and their dependents peace of mind when it comes to fundamental issues such as healthcare.

For more information about the Complementary Benefits plan (Valia), see item 13.10 of the Reference Form.

Participation on Committees. The non-statuary directors do not have the right to remuneration for participation on committees.

Variable compensation

Profit Sharing (PLR). Variable annual payment based on the Company s earnings, and team performance, defined by indicators and objective, measurable targets derived from the strategic plan, and the annual budget approved by the Executive Board. While assuring market competitiveness, the main aim of this program is to acknowledge

Table of Contents

the contribution by an executive, and other employees, to the Company s performance and earnings. Item 13.1 (d) below, describes in detail the methodology for calculation used to determine the value of the compensation of the Non-Executive Board, pursuant to what is stated below.

Other. Non-Statutory Board members are not entitled to bonus, remuneration for participation in meetings, or commissions.

Post-employment benefits

Non-Statutory Directors may enjoy the Medical, Dental, Hospital Assistance paid by the Company after termination of their employment, in order to be able to look for alternatives outside the corporate plan.

Benefits Resulting from the Termination of Holding a Position

Non-Statutory Directors may receive customized service of orientation for outplacement to be performed by the specialist company appointed by Vale.

Compensation based on shares

Long-Term Incentive ILP (by 2013, including) and Virtual Share Program PAV (starting in 2014)

The ILP represents a variable payment based on the Company expected future performance and aimed at retaining and engaging the Executives and aligning them with the vision of the Company. The program was introduced in 2007 and the first payment was made in January 2010. **Starting in 2014, the ILP was replaced by the PAV, whose basis of calculation is the basis of compensation received by Statutory Directors, and the parameters of this calculation will be pre-established for each hierarchical level in each of the countries where the Company operates. The program lasts for 4 years and not for 3 years. Additionally, PAV allows early gradual payments, starting in 2014. Thus, payment can be made in accrued tranches of 20% (at the end of the second year), 30% (at the end of the third year) and 50% (at the end of the fourth year), for as long as performance conditions for each year are reached, as set forth in PAV, that is, placement of Vale within a group comprised by other 12**

478

Table of Contents

companies of similar size (peer group). The payment metrics is the Total Shareholder Return (TSR) relative to the peer group, taking into consideration the businesses and region in which Vale operates and the influence of the Brazilian market s fluctuation. If Vale is at the top of this ranking, the calculated value is increased by 50%. This percentage is decreasing, and on the third place, the value is unchanged, and starting on the tenth position, and lower, there is no payment whatsoever.

For further details, see items 13.1 (b)(iii), (c) and (d) and 13.4 in this Reference Form.

Matching

Like PAV (and the ILP, replaced by PAV in 2014) *Matching* is a variable, long-term form of compensation based on the Company s expected performance. The plan s purpose is to encourage a feeling of ownership , while also helping to retain executives and reinforce the sustainable performance culture. The plan was established in 2008, and was altered in 2014 for purposes of changing the calculation methodology to enter the plan, now considering for such calculation (i) the monthly portion of the fixed compensation received by beneficiaries of this plan, and (ii) parameters predetermined for each hierarchic level and country where the Company operates.

There have been some adjustments to the Matching program for fiscal year 2016 for purposes of allowing the engagement of the executive to this program in years when the net bonus is not sufficient for investment in the program. In those years, the executive may (i) acquire Company shares during 12 months to use the program, in pre-established purchase windows, as well as (ii) engage in the program using previously held shares (provided that these shares are not bound to the current open cycles in the program), according to criteria and conditions that are set forth in the manual of the *Matching* 2016 program. Additionally, it is important to note that adherence to the program is currently voluntary for all Vale executives, except for the President and the Executive Officers, whose adherence and maintenance to the program is mandatory whenever the net bonus is sufficient for investment.

For more information, including the methodology for calculation used to determine the value of the compensation of beneficiaries under this Plan, see items 13.1(b)(iii), (c), and (d) and 13.4 in this Reference Form.

Table of Contents

Non-Statutory Committees

The Company also has three non-statutory committees: the Risk Committee, the Information Disclosure Committee, and the Ethics Committee. All the seats on the non-statutory committees are held by the Company s statutory, non-statutory directors and other leaders, who do not receive any extra compensation for this function, whether fixed or variable.

ii. Regarding the last 3 fiscal years, proportion of each element to make up the total compensation package

The approximate proportions of each element in the total compensation for fiscal years 2013, 2014, and 2015 were as shown in the tables below:

Fiscal Year 2013

Compensation Composition	Executive Board	Fiscal Board	Statutory Board	Non-Statutory Board	Committees(1)
Monthly Fixed Compensation					
Wage or Pro-Labore	89.21%	83.33%	33.36%	36.00%	100.00%
Direct or Indirect Benefits			15.77%	10.00%	
Advisory Committees					
Others(2)	10.79%	16.67%	6.17%		
Variable Compensation					

Table of Contents

Bonus			30.61%		
Profit Sharing				41.00%	
Participation in Meetings					
Commissions					
Others(2)			7.91%		
Benefits Post Labor Resignation			**1.96%**		
Compensation Based on Shares			**4.22%**	**13.00%**	
TOTAL	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**

(1) *Excluding members of these committees who are members of the board of the Company.*

(2) *Payments related to Vale s portion of social security - INSS.*

Fiscal Year 2014

Compensation Composition	**Executive Board**	**Fiscal Board**	**Statutory Board**	**Non-Statutory Board**	**Committees(1)**
Fixed Compensation					
Wage or Pro-Labore	89.26%	83.33%	31.19%	33.38%	83.33.00%
Direct or Indirect Benefits			12.62%	17.41%	
Advisory Committees					
Others(2)	10.74%	16.67%	6.18%	10.16%	16.67%
Variable Compensation					
Bonus			39.12%		
Profit Sharing				25.03%	

Table of Contents

Participation in Meetings					
Commissions					
Others(2)			8.34%	6.51%	
Benefits Post Labor					
Resignation					
Compensation Based on Shares					
TOTAL	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**

(1) *Excluding members of these committees who are members of the board of the Company.*

(2) *Payments related to Vale s portion of social security - INSS.*

Fiscal Year 2015

Compensation Composition	**Executive Board**	**Fiscal Board**	**Statutory Board**	**Non-Statutory Board**	**Committees(1)**
Monthly Fixed Compensation					
Wage or Pro-Labore	87.95%	83.33%	23.88%	42.00	85.77%
Direct or Indirect Benefits			10.29%	10.00%	
Advisory Committees					
Others(2)	12.05%	16.67%	4.76%		14.23%
Variable Compensation					
Bonus			28.79%		
Profit Sharing				42.00%	

Table of Contents

Participation in Meetings					
Commissions					
Others(2)			10.03%		
Benefits Post Labor Resignation			**20.55%**		
Compensation Based on Shares			**1.71%**	**6.00%**	
TOTAL	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**

(1) *Excluding members of these committees who are members of the board of the Company.*

(2) *Payments related to Vale s portion of social security - INSS.*

iii. Methodology for the calculation and readjustment of each compensation element

The global annual compensation to managers, including members of the Board of Directors, the Statutory Board, the Fiscal Board and Advisory Committees, is determined at the Annual General Meeting and distributed by the Board of Directors.

Executive Board

The fixed compensation of the principal members of the Executive Board is represented by the fixed monthly payments (fees), while the fixed monthly compensation for deputies is 50% of the value received by the principal members of the Executive Board. Values are annually defined according to the market practice, checked through referential researches conducted by specialized companies, where the effect of the compensation for similar companies can be observed. There is no variable compensation for the members of the Executive Board.

Table of Contents

Fiscal Board

The fixed compensation of the members of the Fiscal Board is represented by the fixed monthly payments (fees), having as reference the value of 10% of the compensation that, in average, is granted to the Statutory Directors, not computing the benefits, representation monies, and profits participation. The members of the Fiscal Board also have the right to a refund for transport and lodging expenses that are necessary in performing their duties, and deputies will be paid only when they act as members due to vacancy, impediment or absence of the respective member. There is no variable compensation for the members of the Fiscal Board.

Advisory Committees

For members of the Advisory Committees of the Executive Board - Strategic Committee, Financial Committee, Executive Performance Committee, Controlling Committee, and Governance and Sustainability Committee compensation considers solely the payment of a fixed monthly compensation (fees), except for committee members that are Vale managers, who will not receive compensation for sitting in the committees, as per the terms of §2 of Article 15 of Vale s Bylaws. The members of the Advisory committee also do not receive any other type of fixed compensation. Contractual compensation has the purpose of compensating the services of each advisor within the scope of the responsibility attributed to each of the Company s Advisory Committees, defined by the Board of Directors. Determination and adjustment of the compensation for the member of the Advisory Committee are based on the fixed compensation determined for the Board of Directors.

Executive (Statutory) Directors

The fixed compensation of the Statutory Directors is represented by the fixed monthly payment, defined according to the market practice, checked through referential researches conducted by specialized companies where the effect of the compensation for similar companies can be observed, and annually readjusted by the National Broad Consumer Price Index (IPCA), and assessed by the Executive Development Committee and approved by the Board of Directors.

Direct and indirect benefits (medical healthcare, hospital care, dental care, private pension plan, and life insurance) to which they have the right, are calculated according to the market practice checked through referential research conducted by specialized companies where the effect of the

Table of Contents

concession of benefits for the participating companies of similar size can be observed and assessed by the Executive Development Committee and approved by the Board of Directors.

The bonus of the Statutory Directors is calculated based on the earnings of the Company, and may vary between 0% and 200% of the target established considering the market; this depends on the goals set forth and the cash generation of the Company for each fiscal year. Adjustment of fees arising out of IPCA or other merits reflect directly on other elements of the compensation, since they use the fees as basis.

Until 2013 (including), the methodology for the calculation of the compensation based on shares of the Statutory Directors (under the ILP) considered the 75% percentage of the bonus for Executive Directors, and 125% of the bonus for the President, out of the value effectively paid as such, and transformed, as reference, into a number of common shares issued by Vale (virtual shares), **considered the average quotation of the common shares issued by the Company during the last 60 trading days of the last fiscal**. **If the executive member remains in the Company, by the end of three years the number of virtual shares is transformed into a monetary value by the average quotation of the common shares issued by the Company of the last 60 trading days of the third year**. Additionally, t**he program also took into consideration the performance of the Company (Total Shareholder Return (TSR)) regarding a group of 20 similar companies (peer group). If Vale is first in this ranking, the value settled will be increased in 50%. This is a decreasing percentage, so in the 5th position the value remains unchanged, and as of the 15th position, there is no payment. Terms and conditions above are applicable to the beneficiaries of cycles starting in 2011, 2012, and 2013 under the respective program, considering that these cycles have ended, and the cycle beginning in 2013 has ended in December 2015**.

Starting in 2014, the ILP was replaced by PAV, whose basis of calculation is the basis of compensation received by Statutory Directors, and the parameters of this calculation will be pre-established for each

hierarchical level in each of the countries where the Company operates. The program lasts for 4 years and not for 3 years, as described in the above paragraph. The program allows early gradual payments, starting in 2014. Thus, payment can be made in accrued tranches of 20% (at the end of the second year), 30% (at the end of the third year) and 50% (at the end of the fourth year), for as long as performance conditions for each year are reached, as set forth in PAV, that is, placement of Vale within a group comprised by other 12 companies of similar size (peer group). The payment metrics is the Total Shareholder Return (TSR) relative to the peer group, taking into consideration the businesses and region in which Vale operates and the influence of the Brazilian market s fluctuation. If Vale is at the top of this ranking, the calculated value is increased by 50%. This percentage is decreasing, and on the third place, the value is unchanged, and starting on the tenth position and lower, there is no payment whatsoever.

Table of Contents

Until 2013 (including), the calculation **of the Matching determined that the executive member could** allocate 30% or 50% **of his short-term variable payment (bonus) to the purchase of class A preferred shares issued by Vale, through a pre-defined financial institution, under market conditions and without any benefit offered by Vale, on the days set forth in the plan. The bonus percentage that could be allocated by each executive member for participating in the Matching Plan is defined as of the valuation of his performance and potential. This is to be granted to those executive members who acquire shares as per the terms and conditions set forth in the Matching Plan and who three years after the acquisition, still remain linked to Vale and have kept the ownership of all the shares acquired. At the end of the three year period, the administrators end the cycle, and shall give a calculation of effective compliance of the conditions set forth in the manual of the above referred plan. If the terms of the plan have been adhered to, the Company shall pay the executive member a liquid value, as a prize, equal to the amount he bought in shares at the beginning of the program. After the payment of the incentive, the executive members can freely negotiate the preferred shares issued by Vale to be acquired in order to become eligible for the Matching Plan and in agreement with the law in force. Terms and conditions above are applicable to the beneficiaries of cycles starting in 2011, 2012, and 2013 under the respective program**.

Starting in 2014, the calculation methodology to the Matching program was determined as the fixed compensation received by beneficiaries of this plan, and parameters predetermined for each hierarchic level and country where the Company operates.

There have been some adjustments to the Matching program for fiscal year 2016 for purposes of allowing the engagement of the executive to this program in years when the net bonus is not sufficient for investment in the program. In those years, the executive may (i) acquire Company shares during 12 months to use the program, in pre-established purchase windows, as well as (ii) engage in the program using previously held shares (provided that these shares are not bound to the current open cycles in the program), according to criteria and conditions that are set forth in the manual of the *Matching* 2016 program. Additionally, it is important to note that adherence to the program is currently voluntary for all Vale executives, except for the President and the Executive Officers, whose adherence and maintenance to the program is mandatory whenever the net bonus is sufficient for investment.

Table of Contents

Non-Statutory Board

The fixed compensation for the Non-Statutory Directors with a labor contract is represented by a fixed monthly payment. Every year, the Department of Human Resources of Vale hire specialized companies to perform analysis of compensations; the analysis is made pursuant to the complexity of each position compared in the market. The comparison is made with national and multinational companies of similar sizes of several sectors, and the equalization of the comparison is through a scoring system. This system of valuation is known as Hay System , a system of points created by The Hay Group that evaluates the weight of the positions based on their complexity, allowing their global ranking. This system is one of the most used worldwide for this purpose. There is no predetermined index or periodicity for the readjustment of the fixed compensation and when there are readjustments, they are based on the market evolution and the merit of the executive member.

There is no predefined percentage or frequency to adjust the fixed wage and, when there are salary adjustments, they are based on market changes and the performance of the Non-Statutory Director (merit-based).

Direct and indirect benefits (medical healthcare, hospital care, dental care, private pension plan, and life insurance) to which they have right, are calculated according to the market practice checked through referential research conducted by specialized companies where the effect of the concession of benefits for similar companies in the same segment can be observed.

The component of profit sharing of the Non-Statutory Directors is calculated based on the earnings of the Company, and it ranges from 0% to 200% of the target established according to market reference, depending on the goals set forth and the company cash generation for each fiscal year. The adjustment of the fees arising out of the IPCA or other merit forms reflects directly on other compensation elements, as they use the fees as basis.

Until 2013 (including), the methodology for the calculation of the compensation based on shares of the Non-Statutory Directors, under the ILP, took into account 75% out of the bonus granted for directors responsible for global corporate duties or business units and the 50% out of the bonus granted for directors responsible for regional or local corporate duties of the value actually paid for this purpose. This amount is transformed, as reference, into a number of common shares issued by Vale (virtual shares), and considered the average quotation of the common shares issued by the Company during the last 60 trading days of the last fiscal year. If the executive member remains in the Company, by the end of three years the number of virtual shares is transformed into a monetary value by the average quotation of the common shares issued by the Company of the last 60 trading days of the third year. Additionally, the program also takes into consideration the performance of the Company (Total Shareholding Return (TSR)) regarding a group of 20 similar companies (peer group). If Vale is first in this ranking, the value settled will be increased in 50%.

Table of Contents

This is a decreasing percentage, so in the 5th position the value remains unchanged, and as of the 15th position, there is no payment. Terms and conditions above are applicable to the beneficiaries of cycles starting in 2011, 2012, and 2013 under the respective program, noting that these cycles have ended, and that the cycle beginning in 2013 has ended in December 2015.

Starting in 2014, the ILP was replaced by PAV, whose basis of calculation is the basis of compensation received by Statutory Directors, and the parameters of this calculation will be pre-established for each hierarchical level in each of the countries where the Company operates. The program lasts for 4 years and not for 3 years, as described in the above paragraph. The program allows early gradual payments, starting in 2014. Thus, payment can be made in accrued tranches of 20% (at the end of the second year), 30% (at the end of the third year) and 50% (at the end of the fourth year), for as long as performance conditions for each year are reached, as set forth in PAV, that is, placement of Vale within a group comprised by 12 other companies of similar size (peer group). The payment metrics is the Total Shareholder Return (TSR) relative to the peer group, taking into consideration the businesses and region in which Vale operates and the influence of the Brazilian market s fluctuation. If Vale is at the top of this ranking, the calculated value is increased by 50%. This percentage is decreasing, and on the third place, the value is unchanged, and starting on the tenth position and lower, there is no payment whatsoever.

Until 2013 (including), the calculation **of the Matching determined that the executive member could** allocate 30% or 50% **of his short-term variable payment (bonus) to the purchase of class A preferred shares issued by Vale, through a pre-defined financial institution, under market conditions and without any benefit offered by Vale, on the days set forth in the plan. The bonus percentage that could be allocated by each executive member for participating in the Matching Plan is defined as of the valuation of his performance and potential. This is to be granted to those executive members who acquire shares as per the terms and conditions set forth in the Matching Plan and who three years after the acquisition, still remain linked to Vale and have kept the ownership of all the shares acquired. At the end of the three-year period, the administrators end the cycle, and shall give a calculation of effective compliance of the conditions set forth in the manual of the above referred plan. If the terms of the plan have been adhered to, the Company shall pay the executive member a liquid value, as a prize, equal to the amount he bought in shares at the beginning of the program. After the payment of the incentive, the executive members can freely negotiate the preferred shares issued by Vale to be acquired in order to become eligible for the Matching Plan and in agreement with the law in force. Terms and conditions above are applicable to the beneficiaries of cycles starting in 2011, 2012, and 2013 under the respective program**.

Starting in 2014, the calculation methodology to the Matching program was determined as the fixed compensation received by beneficiaries of this plan, and parameters predetermined for each hierarchic level and country where the Company operates.

Table of Contents

Some adjustments have been made to Matching for fiscal year 2016 for purposes of enabling the executive engagement in such program in years where net PLR was not sufficient to invest in the program. In those years, the executive may (i) acquire Company shares during 12 months to use the program, in pre-established purchase windows, as well as (ii) engage in the program using previously held shares (provided that these shares are not bound to the current open cycles in the program), according to criteria and conditions that are set forth in the manual of the *Matching* 2016 program. Additionally, it is important to note that adherence to the program is currently voluntary for all Vale executives, except for the President and the Executive Officers, whose adherence and maintenance to the program is mandatory whenever the net bonus is sufficient for investment.

iv. Reasons that justify the composition of the compensation

Reasons that justify the composition of the compensation are incentive to management improvement, better performance, and retention of executives with the Company, aiming to achieve gains due to the commitment to long-term results and short-term performance of the Company. For directors, Vale adopts a composition model of the compensation that concentrates a significant payment of the total compensation in the variable components (both of short- and long-term), being a part of the policy of risk and earnings sharing with the main executive members of the Company.

v. Existence of members that are not paid by the issuer and the reason for that

On the date of this Reference Form, the Company does not have members that are not paid, except (i) for two (2) members of the Executive Board that fully waive the receipt of remuneration, (ii) the members of the Advisory Committees of the Company who are also managers of Vale, who are not entitled to receive remuneration for participation in the committees, and (iii) members of Non-Statutory Committees, who are not paid for this position, as they are paid as executives or employees of the Company.

For purposes of calculating the global value of the annual remuneration in the current fiscal year amounts due to all members of the Executive Board are taken into consideration, because, in the future, there might be no possibility to waive the remuneration.

Table of Contents

c. Main performance indicators that are taken into consideration when determining each element of the compensation package

All the definitions concerning the compensation are sustained by market research, supported by one or more specialized consultancies. Regarding Statutory Directors, these definitions are also assessed by the Executive Development Committee and approved by the Executive Board.

The main performance indicators taken into account while defining compensation are those related to Company s performance, for instance EBITDA and Free Cash Flow, as well as general productivity and sustainability indicators.

The performance indicators taken into account while determining compensation of the ILP (replaced by PAV in 2014), PAV and Matching are the value of the Company s shares in the market, and in the case of the ILP (replaced by PAV) and PAV, the Company position in relation to a group of companies of similar size (peer group).

d. How the compensation package is structured to reflect the development of the performance indicators

The definition of the executives performance targets, which are used to structure the payment of their profit share and bonus, derive from the strategic plan and the budget, both approved by the Executive Board, which are reviewed each year to sustain the targets and expected results for the Company.

The performance indicators taken into account while determining compensation of the long term incentive plans, namely the ILP (in force until 2013), PAV (in force since 2014) and Matching are the value of the Company s shares in the market, and in the case of the PAV, its position in relation to a group of other 12 companies of similar size (peer group). The peer group applicable to the ILP, replaced in 2014 by PAV, was comprised by 20 companies of similar size.

e. How the compensation policy is aligned with the issuer s short-, medium- and long-term interests

The Company compensation policy is based on its performance and financial sustainability in the short, medium, and long term, in line with its strategic plan, while also assuring shareholder value.

Table of Contents

As such, the ILP (replaced by PAV in 2014) and Matching were structured with three-year grace period for the payment of compensation, and PAV, with a four-year grace period. These terms were established to align these programs with the evolution of the Company s performance indicators.

f. Existence of compensation supported by subsidiaries, and direct or indirect affiliates or holding companies

One of the Company s executive directors was also the President and Chief Executive Officer of Vale Canada Limited, a Vale subsidiary. As such, part of this executive s fixed and variable compensation and benefits are paid by Vale Canada Limited. For more information, see item 13.15 in this Reference Form.

g. Existence of any compensation or benefits connected to the occurrence of a given corporate event, such as the sale of the issuer s controlling interest

There is no compensation or benefit for the members of the Fiscal or Executive Boards, Statutory or Non-Statutory Committees, or the Executive or Non-Executive Board that is in any way connected to the occurrence of any corporate event.

13.2 Total Compensation of the executive board, statutory board, and fiscal board

Total Compensation Estimates for the Current Fiscal Year to be Ended on December 31, 2016 Annual Amounts

	Executive Board	Statutory Board	Fiscal Board	Total
Total Number of members	22.00	8.00	5.00	35.00
Number of paid members	22.00	8.00	5.00	35.00

Table of Contents

	Executive Board	Statutory Board	Fiscal Board	Total
Annual fixed compensation (in R$)				
Salaries or pro-labore fees	5,445,000.00	24,346,609.87	1,521,663.12	31,313,272.99
Direct and indirect benefits	0.00	7,236,850.96	0.00	7,236,850.96
Compensation for participation in Committees	0.00	0.00	0.00	0.00
Other	1,089,000.00	5,679,636.71	304,332.62	7,072,969.33
Description of other fixed compensation	Vale s Portion of Social Security [INSS]	Vale s Portion of Social Security [INSS]	Vale s Portion of Social Security [INSS]	
Variable Compensation (in R$)				
Bonus	0.00	0.00	0.00	0.00
Profit share	0.00	0.00	0.00	0.00
Compensation for participation in meetings	0.00	0.00	0.00	0.00
Commissions	0.00	0.00	0.00	0.00
Other		7,336,839.00		7,336,839.00
Description of other variable compensation		Vale s Portion of Social Security [INSS]		
Post-employment benefits	0.00	0.00	0.00	0.00
Employment termination benefits	0.00	33,534,375.25	0.00	33,534,375.25

Table of Contents

	Executive Board	Statutory Board	Fiscal Board	Total
Stock-based compensation, including options	0.00	3,273,745.45	0.00	3,273,745.45

Table of Contents

Notes	1. The total number of members corresponds to the estimate annual average of the management entity, determined monthly, according to the terms in Circular CVM/SEP 002/16. 2) The field Total number of members includes the regular members (11 members) and deputy members (11 members) of the Executive Board. 3) The number of paid members corresponds to the estimate annual average of members of this management entity, calculated monthly, to whom compensation recognized in the financial statement shall imply, as set forth in Circular CVM/SEP 002/16.	1. The total number of members corresponds to the estimate annual average of the management entity, determined monthly, according to the terms in Circular CVM/SEP 002/16. 2) The field Stock-based compensation includes the amounts paid in the PAV program (2014 cycle) and IPL program (2013 cycle) as well as the estimated amounts of the Matching. 3) The number of paid members corresponds to the estimate annual average of members of this management entity, calculated monthly, to whom compensation recognized in the financial statement shall imply, as set	1. The total number of members corresponds to the estimate annual average of the management entity, determined monthly, according to the terms in Circular CVM/SEP 002/16. 2) The field Total number of members includes the regular members (5 members) of the Fiscal Council 3) The number of paid members corresponds to the estimate annual average of members of this management entity, calculated monthly, to whom compensation recognized in the financial statement shall imply, as set forth in Circular CVM/SEP 002/16.

Table of Contents

Total Compensation Estimates for the Current Fiscal Year to be Ended on December 31, 2016 Annual Amounts

	Executive Board	Statutory Board	Fiscal Board	Total
		forth in Circular CVM/SEP 002/16.		
		2. The amount presented in the field Bonus refers to the value that would be paid in the 2016 fiscal year relative to the goals of the 2015 fiscal year.		
Total amount of compensation	6,534,000.00	81,408,057.24	1,825,995.74	89,768,052.98

Total Compensation Estimates for the Current Fiscal Year to be Ended on December 31, 2015 Annual Amounts

	Executive Board	Statutory Board	Fiscal Board	Total
Total Number of members	21.00	8.00	4.75	33.75
Number of paid members	19.00	8.00	4.75	31.75
Annual fixed compensation (in R$)				
Salaries or pro-labore fees	4,115,016.26	22,278,939.57	1,250,589.68	27,644,545.51
Direct and indirect benefits	0.00	9,596,806.72	0.00	9,596,806.72
Compensation for participation in Committees	0.00	0.00	0.00	0.00

Table of Contents

	Executive Board	Statutory Board	Fiscal Board	Total
Other	563,539.45	4,440,137.09	250,117.94	5,253,794.48
Description of other fixed compensation	Vale s Portion of Social Security [INSS]	Vale s Portion of Social Security [INSS]	Vale s Portion of Social Security [INSS]	
Variable Compensation (in R$)				
Bonus	0.00	26,860,815.72	0.00	26,860,815.72
Profit share	0.00	0.00	0.00	0.00
Compensation for participation in meetings	0.00	0.00	0.00	0.00
Commissions	0.00	0.00	0.00	0.00
Other		9,361,109.14		9,361,109.14
Description of other variable compensation	0.00	Vale s Portion of Social Security [INSS]	0.00	
Post-employment benefits	0.00	0.00	0.00	0.00
Employment termination benefits	0.00	19,170,196.17	0.00	19,170,196.17
Stock-based compensation, including options	0.00	1,596,622.42	0.00	1,596,622.42

Table of Contents

Notes	1. The total number of members corresponds to the estimate annual average of the management entity, determined monthly, according to the terms in Circular CVM/SEP 002/16. 2) The field Total number of members includes the regular members (11 members) and deputy members (11 members) of the Executive Board. 3) The number of paid members corresponds to the estimate annual average of members of this management entity, calculated monthly, to whom compensation recognized in the financial statement shall imply, as set forth in Circular CVM/SEP 002/16.	1. The total number of members corresponds to the estimate annual average of the management entity, determined monthly, according to the terms in Circular CVM/SEP 002/16. 2) The field Stock-based compensation includes the amounts paid in the PAV program (2014 cycle) and IPL program (2013 cycle) as well as the estimated amounts of the Matching. 3) The value informed in the field Bonus refers to the amount paid in the fiscal year 2015 regarding goals of fiscal year 2014. 4) The number of paid members corresponds to the estimate annual	1. The total number of members corresponds to the estimate annual average of the management entity, determined monthly, according to the terms in Circular CVM/SEP 002/16. 2) The field Total number of members includes the regular members (5 members) of the Fiscal Council 3) The number of paid members corresponds to the estimate annual average of members of this management entity, calculated monthly, to whom compensation recognized in the financial statement shall imply, as set forth in Circular CVM/SEP 002/16.

Table of Contents

Total Compensation Estimates for the Current Fiscal Year to be Ended on December 31, 2015	Annual Amounts			
	Executive Board	**Statutory Board**	**Fiscal Board**	**Total**
		average of members of this management entity, calculated monthly, to whom compensation recognized in the financial statement shall imply, as set forth in Circular CVM/SEP 002/16.		
Total amount of compensation	R$4,678,555.71	R$ 93,304,626.83	R$ 1,500,707.62	R$ 99,483,890.16

Table of Contents

Total Compensation for the Fiscal Year Ended on December 31, 2014 Annual Amounts

	Executive Board	Statutory Board	Fiscal Board	Total
Total number of members	21.00	8.00	4.00	33.00
Number of members	18.75	8.00	4.00	30.75
Annual fixed compensation (in R$)				
Salaries or pro-labore fees	4,067,493.34	22,681,831.09	1,098,276.19	27,847,600.62
Direct and indirect benefits	0.00	9,174,933.52	0.00	9,174,933.52
Compensation for participation in Committees	0.00	0.00	0.00	0.00
Other	489,548.16	4,495,819.46	219,655.24	5,205,022.86
Description of other fixed compensation	Vale s Portion of Social Security [INSS]	Vale s Portion of Social Security [INSS]	Vale s Portion of Social Security [INSS]	
Variable Compensation (in R$)				
Bonus	0.00	28,450,477.47	0.00	28,450,477.47
Profit share	0.00	0.00	0.00	
Compensation for participation in meetings	0.00	0.00	0.00	
Commissions	0.00	0.00	0.00	
Other	0.00	6,061,536.03	0.00	6,061,536.03
Description of other variable compensation		Vale s Portion of Social Security [INSS]		
Post-employment benefits	0.00	0.00	0.00	0.00

Table of Contents

Employment termination benefits	0.00	0.00	0.00	0.00
Stock-based compensation		1,857,202.70		1,857,202.70
Observation	1. The total number of members corresponds to the average over the year of the cited administrative entity as determined monthly. in accordance with Circular Letter CVM/SEP 002/16 2. The field Total Number of members includes the regular members and deputy members of the Board of Directors. 3) The number of paid members corresponds to the estimate annual average of members of this management entity, calculated monthly, to whom compensation recognized in the financial statement shall imply, as set forth in Circular CVM/SEP 002/16.	1 The total number of members corresponds to the average over the year of the cited administrative entity as determined monthly. in accordance with Circular Letter CVM/SEP 002/16. 2. The amounts shown in the field Stock-based compensation includes the amounts paid in 2012 cycle of the ILP and amounts related to the Matching programs 3. The amount presented in the field Bonus refers to the value paid in the 2014 fiscal year relative to the goals of 2013. 4) The number of paid members corresponds to the estimate annual average of members of this management entity, calculated monthly, to whom	1 The total number of members corresponds to the average over the year of the cited administrative entity as determined monthly. in accordance with Circular Letter CVM/SEP 002/16. 2 - The field Total Number of members includes the regular members (4 members) of the Fiscal Council. 3) The number of paid members corresponds to the estimate annual average of members of this management entity, calculated monthly, to whom compensation recognized in the financial statement shall imply, as set forth in Circular CVM/SEP 002/16.	

	compensation recognized in the financial statement

Table of Contents

		shall imply, as set forth in Circular CVM/SEP 002/16.		
Total compensation	4,557,041.50	72,721,800.27	1,317,931.43	78,596,773.20

Total Compensation for the Fiscal Year Ended on December 31, 2013 Annual Amounts

	Executive Board	Statutory Board	Fiscal Board	Total
Total number of members	21.00	8.00	4.00	33.00
Number of paid members	19.00	8.00	4.00	31.00
Annual fixed compensation (in R$)				
Salaries or pro-labore fees	4,188,228.00	20,064,877.00	994,465.00	25,247,570.00
Direct and indirect benefits	0.00	9,485,211.00	0.00	9,485,211.00
Compensation for participation in Committees	0.00	0.00	0.00	0.00
Other	506,540.00	3,713,500.82	198,893.00	4,418,933.82
Description of other fixed compensation	Vale s Portion of Social Security - INSS	Vale s Portion of Social Security - INSS	Vale s Portion of Social Security - INSS	
Variable Compensation (in R$)				
Bonus	0.00	18,413,629.00	0.00	18,413,629.00

Table of Contents

	Executive Board	Statutory Board	Fiscal Board	Total
Total number of members	21.00	8.00	4.00	33.00
Profit share	0.00	0.00	0.00	0.00
Compensation for participation in meetings	0.00	0.00	0.00	0.00
Commissions	0.00	0.00	0.00	0.00
Other	0.00	4,757,767.95	0.00	4,757,767.95
Description of other variable compensation		Vale s Portion of Social Security [INSS]		
Post-employment benefits	0.00	0.00	0.00	0.00
Employment termination benefits	0.00	1,181,879.00	0.00	1,181,879.00
Stock-based compensation, including options	0.00	2,537,872.00	0.00	2,537,872.00

Table of Contents

Observation	1 The total number of members corresponds to the average over the year of the cited administrative entity as determined monthly. in accordance with Circular Letter CVM/SEP 002/16.	1 The total number of members corresponds to the average over the year of the cited administrative entity as determined monthly. in accordance with Circular Letter CVM/SEP 002/16.	1 The total number of members corresponds to the average over the year of the cited administrative entity as determined monthly. in accordance with Circular Letter CVM/SEP 002/16.
	2 - The field Total number of members includes the regular members and deputy members of the Board of Directors, as they are all entitled to the compensation.	2 The amounts shown in the field Stock-based compensation includes the amounts paid in the ILP Program and the Matching.	2 - The field Number of members includes the regular members (4 members) of the Fiscal Council
	3) The number of paid members corresponds to the estimate annual average of members of this management entity, calculated monthly, to whom compensation recognized in the financial statement shall imply, as set	3. The amount presented in the field Bonus refers to the effective value paid in the 2013 fiscal year relative to the goals of the 2012 fiscal year. Two of the Executive Directors of Vale started in their positions during fiscal year 2012 and, as such, the amount paid as bonus exclusively for these directors was calculated *pro rata*	3) The number of paid members corresponds to the estimate annual average of members of this management entity, calculated monthly, to

Table of Contents

	Executive Board	Statutory Board	Fiscal Board	Total
Total number of members	21.00	8.00	4.00	33.00
	forth in Circular CVM/SEP 002/16.	*temporis,* according to rules in the plan. Regarding other directors who have stayed in their positions throughout the fiscal year 2012, the bonus was paid. 4) The number of paid members corresponds to the estimate annual average of members of this management entity, calculated monthly, to whom compensation recognized in the financial statement shall imply, as set forth in Circular CVM/SEP 002/16.	whom compensation recognized in the financial statement shall imply, as set forth in Circular CVM/SEP 002/16.	
Total amount of compensation	4,694,768.00	60,154,736.77	1,193,358.00	66,042,862.77

Table of Contents

13.3 - Variable Compensation of the executive board, statutory board, and fiscal board

Estimates for the fiscal year to be ended on December 31, 2016

	Executive Board	Statutory Board	Fiscal Board	Total
Total number of members	**22.00**	**8.00**	**5.00**	**35.00**
Number of paid members(1)	0.00	0.00	0.00	0.00
Bonus				
Minimum amount estimated by compensation plan		0.00		0.00
Maximum amount estimated by compensation plan(2)		46,743,030.66		46,743,030.66
Amount estimated by the compensation plan if pre-established goals are met (Target)(3)		23,371,515.33		23,371,515.33
Profit share				
Minimum amount estimated by compensation plan				
Maximum amount estimated by compensation plan				
Amount estimated by the compensation plan if pre-established goals are met				

(1) The total number of members corresponds to the average over the year of the number of members of the administrative entity as determined monthly, under the terms in item 13.2

(2) Corresponds to the estimate number of executive officers and board members, as applicable, to whom variable compensation is expected to be attributed as recognized in the income of the issuer at the close of the fiscal year, in accordance with the provision of Circular Letter CVM/SEP 02/2016.

(3) Amount corresponding to 200% of the target set forth as market reference.

(4) Amount corresponding to 100% of the target set forth as market reference.

Table of Contents

(5) The amount above considered the amount estimated if goals relative to fiscal year 2015 had been met. However, considering that the goals were not met, there will be no payment of bonus in 2016 relative to fiscal year ended on December 31, 2015

Estimates for the fiscal year to be ended on December 31, 2015

	Executive Board	Statutory Board	Fiscal Board	Total
Total number of members	21.00	8.00	4.75	33.75
Number of paid members(1)	0.00	8.00	0.00	8.00
Bonus				
Minimum amount estimated by compensation plan				
Maximum amount estimated by compensation plan(2)		46,576,742.04		46,576,742.04
Amount estimated by the compensation plan if pre-established goals are met (Target)(3)		23,288,371.02		23,288,371.02
Amount effectively paid at the close of the fiscal year(4)		26,860,815.72		26,860,815.72
Profit share				
Minimum amount estimated by compensation plan				
Maximum amount estimated by compensation plan				
Amount estimated by the compensation plan if pre-established goals are met (Target)				

(1) The total number of members corresponds to the average over the year of the number of members of the administrative entity as determined monthly, under the terms in item 13.2

Table of Contents

(2) Corresponds to the estimate number of executive officers and board members, as applicable, to whom variable compensation is expected to be attributed as recognized in the income of the issuer at the close of the fiscal year, in accordance with the provision of Circular Letter CVM/SEP 02/2016.

(3) Amount corresponding to 200% of the target set forth as market reference.

(4) Amount corresponding to 100% of the target set forth as market reference

(5) The amount presented in the field Bonus refers to the effective value paid in the 2015 fiscal year relative to the goals of the 2014 fiscal year.

Fiscal year ended on December 31, 2014

	Executive Board	Statutory Board	Fiscal Board	Total
Total number of members	**21.00**	**8.0**	**4.00**	**33.00**
Number of paid members (1)	0.00	8,00	0.00	8,00
Bonus				
Minimum amount estimated by compensation plan				
Maximum amount estimated by compensation plan(2)		45.363.662,18		45.363.662,18
Amount estimated by the compensation plan if pre-established goals are met (Target)(3)		22.681.831,09		22.681.831,09
Amount effectively paid at the close of the fiscal year(4)		28.450.477,47		28.450.477,47
Profit share				
Minimum amount estimated by compensation plan				
Maximum amount estimated by compensation plan				
Amount estimated by the compensation plan if pre-established goals are met (Target)				
Amount effectively paid at the close of the fiscal year				

(1) The total number of members corresponds to the average over the year of the number of members of the administrative entity as determined monthly, under the terms in item 13.2

Table of Contents

(2) Corresponds to the estimate number of executive officers and board members, as applicable, to whom variable compensation is expected to be attributed as recognized in the income of the issuer at the close of the fiscal year, in accordance with the provision of Circular Letter CVM/SEP 02/2016.

(3) Amount corresponding to 200% of the target set forth as market reference.

(4) Amount corresponding to 100% of the target set forth as market reference

(5) The amount presented in the field Bonus refers to the effective value paid in the 2015 fiscal year relative to the goals of the 2014 fiscal year.

Fiscal year ended on December 31, 2013

	Executive Board	Statutory Board	Fiscal Board	Total
Total number of members	**21.00**	**8.0**	**4.00**	**33.00**
Number of paid members (1)	0.00	8.00	0.00	8.00
Bonus				
Minimum amount estimated by compensation plan				
Maximum amount estimated by compensation plan(2)		30,097,316.00		30,097,316.00
Amount estimated by the compensation plan if pre-established goals are met (Target)(3)		20,064,877.00		20,064,877.00
Amount effectively paid at the close of the fiscal year(4)		18,413,629.00		18,413,629.00
Profit share (in R$)				
Minimum amount estimated by compensation plan				

Table of Contents

	Executive Board	Statutory Board	Fiscal Board	Total
Maximum amount estimated by compensation plan				
Amount estimated by the compensation plan if pre-established goals are met (Target)				
Amount effectively paid at the close of the fiscal year				

(1) The total number of members corresponds to the average over the year of the number of members of the administrative entity as determined monthly, under the terms in item 13.2

(2) Corresponds to the estimate number of executive officers and board members, as applicable, to whom variable compensation is expected to be attributed as recognized in the income of the issuer at the close of the fiscal year, in accordance with the provision of Circular Letter CVM/SEP 02/2016.

(3) Amount corresponding to 200% of the target set forth as market reference.

(4) Amount corresponding to 100% of the target set forth as market reference

(5) The amount presented in the field Bonus refers to the effective value paid in the 2015 fiscal year relative to the goals of the 2014 fiscal year

13.4 Stock-based compensation plan for the Executive Board and the Statutory Board:

The Company has two stock-based compensation plans for the Statutory Board, which do not extend to the Executive Board. Neither plan grants permission for Company stock purchasing option, but only the payment of a bonus as per the market quotation for the Company stock.

Table of Contents

a. **General Terms and Conditions**

Long-Term Program (ILP) (until 2013) and the Virtual Shares Program (PAV) (starting in 2014)

ILP is a long-term incentive program introduced in 2007 based on the Company s expected performance. The amount to be paid to the Statutory Directors in the ILP was defined based on the percentage of the short-term (bonus) variable tranche, of 125% for the President and 75% for the other members of the board, from the amount to be effectively paid for this purpose. This amount was transformed, as a reference, in a number of common shares issued by Vale (virtual shares), **during the last 60 trading days of the last fiscal**. **If the executive member remains in the Company, by the end of three years the number of virtual shares is transformed into a monetary value [by the average quotation of the common shares issued by the Company of the last 60 trading days of the third year**. **The program also takes into consideration the performance of the Company regarding a group of 20 similar companies (peer group). If Vale is first in this ranking, the value settled will be increased in 50%. This is a decreasing percentage, so in the 5th position the value remains unchanged, and as of the 15th position, there is no payment.** The terms and conditions described above are applicable to beneficiaries from the 2011, 2012 and 2013 cycle within the scope of said program, **considering that these cycles have ended, and the cycle beginning in 2013 has ended in December 2015**.

Starting in 2014, the ILP was replaced by PAV, whose basis of calculation is the basis of compensation received by Statutory Directors, and the parameters of this calculation will be pre-established for each hierarchical level in each of the countries where the Company operates. The program lasts for 4 years and not for 3 years, as described in the above paragraph. The program allows early gradual payments, starting in 2014. Thus, payment can be made in accrued tranches of 20% (at the end of the second year), 30% (at the end of the third year) and 50% (at the end of the fourth year), for as long as performance conditions for each year are reached, as set forth in PAV, that is, placement of Vale within a group comprised by other 12 companies of similar size (peer group). The payment metrics is the Total Shareholder Return (TSR) relative to the peer group, taking into consideration the businesses and region in which Vale operates and the influence of the Brazilian market s fluctuation. If Vale is at the top of this ranking, the calculated value is increased by 50%. This percentage is decreasing, and on the third place, the value is unchanged, and starting on the tenth position and lower, there is no payment whatsoever.

Matching

This is a variable, long-term form of compensation created in 2008, based on the Company s expected performance. The main purpose of this program is to encourage an ownership feeling as well as to leverage executive retention and reinforce a sustainable performance culture. To become eligible for the Matching program, an executive may allocate 30.0% to 50.0% of his/her bonus (short-term variable compensation) for the purchase of Class A preferred stock issued by Vale, through the mediation of a pre-defined financial institution, under market conditions, on the days set in the scheme, without any benefit being offered by Vale.

510

Table of Contents

Those executives who acquire shares under the terms and conditions of the Matching scheme on the stipulated dates and who are still in the employment of Vale three years after they were acquired and who have kept the ownership of all the shares purchased are eligible for a cash prize. At the end of the three-year period, when the cycle reaches its conclusion, the Managers check that the terms of the scheme, as set forth in the manual, have been followed. Assuming that the terms of the plan have been observed, the Company pays the executive a net value, as a prize, based in the market value of the Company s shares held by the executive during the program. After the incentive has been paid, the executives are free to sell the preferred stock issued by Vale that they had acquired to be eligible to the Matching scheme, in compliance with existing legislation. Until 2013 (including), the bonus percentage to be allocated to each executive to be part of the Matching Plan was defined based on the analysis of its performance and potential. The terms and conditions above described are applicable to the beneficiaries of the 2011, 2012 and 2013 cycles in the scope of said program.

Starting in 2014, the basis of calculation for the Matching program is the fixed remuneration received by the Company Statutory Directors, and the parameters for this calculation will be pre-established for each of the hierarchical levels for each of the countries in which the Company operates.

There have been some adjustments to the Matching program for fiscal year 2016 for purposes of allowing the engagement of the executive to this program in years when the net bonus is not sufficient for investment in the program. In those years, the executive may (i) acquire Company shares during 12 months to use the program, in pre-established purchase windows, as well as (ii) engage in the program using previously held shares (provided that these shares are not bound to the current open cycles in the program), according to criteria and conditions that are set forth in the manual of the *Matching* 2016 program.

Additionally, it is important to note that currently, adherence to the program is voluntary for all Vale executives, except for the President and Executive Officers, for whom adherence and maintenance in the program is mandatory whenever there is net bonus payment sufficient for investment.

b. **Major Plan Objectives**

The major objectives of the compensation programs based on shares aforementioned are retention of the Company`s major executives, keep them engaged to the Company and encourage the ownership feeling , so that they become committed to mid and long terms results.

Table of Contents

c. How the plans contribute for the achievement of these objectives

The compensation plans based on shares aforementioned promote the alignment of the stockholders and the Statutory Directors interests, as they ensure that there are only gains for the executives as long as there are gains for the Company as well.

d. Where the plans fit into the issuer`s compensation policy

The compensation plans based on shares aforementioned fit into Vale`s compensation policy once they respond for the long-term alignment of executives with the interests of the Company and the shareholders, contributing for sustainability, and fostering a competitiveness level that complies with the Company business and retention of qualified professionals. They have been designed upon the support provided by specialized consulting services and upon the consideration of domestic and international market trends and moves.

e. How the plans promote the alignment between management and the issuer interests at short, mid and long term

The design of compensation plans based on shares aforementioned incorporates the Company performance rate factors upon company stocks fluctuated value in three (for ILP and Matching) or four years (for PAV) and, in case of ILP or the replacing PAV starting in the 2014 cycle, Company performance relative to other companies of similar size within the same industry and the same reference period. This peer group is comprised by 20 companies, in the case of the ILP, and 12 companies, for PAV, currently in force for cycles starting in 2014. Thus, the plans align the medium- and long-term interests of both the managers and the Company. For further information on the changes made to the aforementioned programs, see item (a) above).

f. Maximum number of comprised stocks

Not applicable. No stock purchasing option is granted within the scope of either the ILP or PAV (replacing the ILP) or the Matching programs.

The number of virtual ordinary stocks granted as reference within the scope of the ILP varied with the short-term variable remuneration of each executive and with the average market price of the common shares issued by Vale at a set number of trading days before the approval. In case of PAV, replacing the ILP, the number of virtual

Table of Contents

shares granted as reference under this plan varies according to the base compensation of each executive and the average quotation of common shares issued by Vale in a specific number of trade days prior to the granting.

In the Matching Program, until 2013 (including), the executive had the option to allocate 30 or 50% of his bonus to purchase Company s class A preferred stocks and become eligible to participate in the program, after their potential and performance assessment. Starting in 2014, the calculation base for the Matching program was the fixed compensation received by Statutory Directors of the Company, and parameters for this calculation are pre-determined for each hierarchic level and each country where the Company operates. There have been some adjustments to the Matching program for fiscal year 2016 for purposes of allowing the engagement of the executive to this program in years when the net bonus is not sufficient for investment in the program. In those years, the executive may (i) acquire Company shares during 12 months to use the program, in pre-established purchase windows, as well as (ii) engage in the program using previously held shares (provided that these shares are not bound to the current open cycles in the program), according to criteria and conditions that are set forth in the manual of the *Matching* 2016 program.

Additionally, it is important to note that adherence to the program is currently voluntary for all Vale executives, except for the President and the Executive Officers, whose adherence and maintenance to the program is mandatory whenever the net bonus is sufficient for investment.

g. Maximum number of options to be granted

Not applicable. No stock purchasing option is granted within the scope of the compensation plans based on shares aforementioned.

h. Stock purchasing conditions

Not applicable. The ILP and Matching programs do not grant stock purchasing options to executives. Once assessed, the amount owed to executives within the scope of these plans is paid in cash.

Table of Contents

i. Criteria for stock pricing or option reference period

Not applicable. As no stock purchasing option is granted within the scope of either Plan, it makes no sense setting criteria for stock pricing or option reference period.

In the ILP, replaced by PAV, the amount owed to executives was calculated as per the valuation of a given number of Vale`s virtual stocks within the period of the past three years, and is based upon the average quotation of Vale s ordinary stocks in the last 60 stock market floor sessions prior to the incentive grant, and the average quotation of Vale s ordinary stocks at the closing of the last 60 stock market floor sessions of the third year. This amount is then multiplied by a factor of Company performance relative to a peer group of 20 global companies of a similar size. Based on the Company s position relative to this group of global companies, the ILP may be increase in 50% or it may drop to zero.

Under PAV, starting in 2014, the calculation base is the base compensation received by Statutory Directors, and the parameters of this calculation will be pre-established for each hierarchical level in each of the countries where the Company operates. The program lasts for 4 years and not for 3 years, as described in the above paragraph. The program allows early gradual payments, starting in 2014. Therefore, payment may be done in accrued tranches of 20% (by the end of the second year), 30% (by the end of the third year), and 50% (by the end of the fourth year), provided that the performance condition at each is met, as set forth in PAV, namely, placement of Vale within the group comprised by 12 companies of similar size (peer group). The payment metric is the Total Shareholder Return (TSR) related to the peer group, considering the businesses and areas where Vale operates and the influence of variations in the Brazilian market. This percentage is decreasing, and on the third place, the value is unchanged, and starting on the tenth position and lower, there is no payment whatsoever.

However, for the Matching Plan, the net amount to be paid to executives as incentives is calculated upon the number of Company class A preferred stocks purchased by the executive to become eligible for the Plan.

j. Criteria for establishing the reference period

Not applicable. As mentioned above, compensation plans based on shares aforementioned do not grant stock purchasing option. Therefore, there is no reference period. However, both Programs pre-establish that the payment of incentives be made after a grace period of three years (for ILP and Matching) or four years (for PAV, replacing the ILP since 2014). In case of PAV, payment may be done in cumulative installments equal to 20% (by the end of the second year), 30% (by the end of the

Table of Contents

third year), and 50% (by the end of the fourth year), provided that the performance condition at each is met, as set forth in PAV, namely, placement of Vale within the group comprised by other 12 companies of similar size (peer group). The payment metric is the Total Shareholder Return (TSR) related to the peer group.

k. Liquidation conditions

Both compensation plans based on shares aforementioned pre-establish that premiums be paid in cash.

l. Restrictions to stock transfer

With respect to the Matching Plan, the executive will lose his/her right to the premium if he/she transfers, within the three-year period, any Company preferred stock that is plan-bonded.

Also under the Plan, operations with derivatives are void, when involving the sale of securities of Vale, as well as the lease to third parties of shares held by the member of the program, considering that one of the goals of the Matching program is the exposure and alignment of the executive to the Company traded shares in the period of the Plan. Operations described above are void as well (involving the sale of derivatives and share lease) related to any of Vale shares held by the executive, even when acquired out of the Plan, while the executive is an active member of the Plan.

Not applicable to the ILP or PAV (replacing the ILP), though, once this Plan`s participants are not required to retain their stockholding position in the company nor are they granted any stocks within the scope of the Plan.

m. Criteria and events that, upon occurrence, shall result in the plan suspension, change or extinction

With respect to the Matching Plan, any transference of Vale s issued preferred stocks that are plan-bonded before the three-year grace period or the executive s severance generate the extinction of any rights whatsoever that they would otherwise be entitled to within the scope of the Plan.

Table of Contents

However, with respect to the ILP or the PAV (replacing the ILP), the executive s severance generates the extinction of any rights whatsoever that they would otherwise be entitled to within the scope of the Plan.

n. Effects generated by the issuer s Board and Committee Manager s departure upon his/her rights as provided by the stock-based compensation plan

As the Plan works as a retention mechanism, if the Manager resigns, he/she shall lose all his/her rights to share-based compensation. In case the Manager s contract is rescinded or not renewed by the Company, the participant shall receive the values he had purchased prior to the contract rescission or termination date.

13.5 Stock-based compensation for executive board and the statutory board.

The Long Term Incentive (ILP), the Virtual Shares Program (PAV) (replaced the ILP) and Matching described in detail in 13.4, as they do not include or grant stock purchasing option, because they are based on the quotations of the Company s common and preferred shares, as applicable, in order to define the value in kind to be paid as incentive to the executive directors.

Thus, most information, as for instance, information related to the average weighted price in the fiscal year for (a) outstanding options at the beginning of the fiscal year, (b) options that are not redeemed during the fiscal year, (c) options redeemed during the fiscal year, (d) options expired during the fiscal year, and potential dilution in case all granted options were redeemed, is not applicable to the Company. Considering the above, tables below present, for reference purposes, information related to the incentive, including amounts paid each period.

Table of Contents

Share-based compensation for the current fiscal year (2016)

	Executive Board	Statutory Board	Total
Number of members(1)	22.00	8.00	8.00
Number of paid members (2)	0.00	8.00	8.00
Weighted average price:			
(a) Outstanding options at the beginning of the fiscal year	n/a	n/a	n/a
(b) Options that are not redeemed during the fiscal year	n/a	n/a	n/a
(c) Options redeemed during the fiscal year	n/a	n/a	n/a
(d) Options expired during the fiscal year	n/a	n/a	n/a
Potential dilution in case all granted options were redeemed	n/a	n/a	n/a

(1) The total number of members corresponds to the average over the year of the number of members of the administrative entity as determined monthly, under the terms in item 13.2

(2) Corresponds to the number of directors and board members, as applicable, assigned with the share based compensation acknowledged in the results of the fiscal year, as set forth in Resolution CVM/SEP 02/2016.

Table of Contents

Share-based compensation for the current fiscal year (2015)

	Executive Board	Statutory Board	Total
Number of members(1)	21.00	8.00	29.00
Number of paid members (2)	0.00	8.00	8.00
Weighted average price:			
(a) Outstanding options at the beginning of the fiscal year	n/a	n/a	n/a
(b) Options that are not redeemed during the fiscal year	n/a	n/a	n/a
(c) Options redeemed during the fiscal year	n/a	n/a	n/a
(d) Options expired during the fiscal year	n/a	n/a	n/a
Potential dilution in case all granted options were redeemed	n/a	n/a	n/a

(1) The total number of members corresponds to the average over the year of the number of members of the administrative entity as determined monthly, under the terms in item 13.2

(2) Corresponds to the number of directors and board members, as applicable, assigned with the share based compensation acknowledged in the results of the fiscal year, as set forth in Resolution CVM/SEP 02/2016.

Share-based compensation for the current fiscal year (2014)

	Executive Board	Statutory Board	Total
Number of members(1)	21.00	8.00	29.00
Number of paid members (2)	0.00	8.00	8.00
Weighted average price:			
(a) Outstanding options at the beginning of the fiscal year	n/a	n/a	n/a
(b) Options that are not redeemed during the fiscal year	n/a	n/a	n/a

Table of Contents

	Executive Board	Statutory Board	Total
(c) Options redeemed during the fiscal year	n/a	n/a	n/a
(d) Options expired during the fiscal year	n/a	n/a	n/a
Potential dilution in case all granted options were redeemed	n/a	n/a	n/a

(1) The total number of members corresponds to the average over the year of the number of members of the administrative entity as determined monthly, under the terms in item 13.2

(2) Corresponds to the number of directors and board members, as applicable, assigned with the share based compensation acknowledged in the results of the fiscal year, as set forth in Resolution CVM/SEP 02/2016.

Share-based compensation for the current fiscal year (2013)

	Executive Board	Statutory Board	Total
Number of members(1)	21.00	8.00	29.00
Number of paid members (2)	0.00	8.00	8.00
Weighted average price:			
(a) Outstanding options at the beginning of the fiscal year	n/a	n/a	n/a
(b) Options that are not redeemed during the fiscal year	n/a	n/a	n/a
(c) Options redeemed during the fiscal year	n/a	n/a	n/a
(d) Options expired during the fiscal year	n/a	n/a	n/a
Potential dilution in case all granted options were redeemed	n/a	n/a	n/a

(1) The total number of members corresponds to the average over the year of the number of members of the administrative entity as determined monthly, under the terms in item 13.2

(2) Corresponds to the number of directors and board members, as applicable, assigned with the share based compensation acknowledged in the results of the fiscal year, as set forth in Resolution CVM/SEP 02/2016.

Table of Contents

Stock-based compensation paid in the current fiscal year (2016)

	Executive Board	Statutory Board	Total
Grant of stock options (Incentive Grant)			
Grant date (Grant date of incentive)		January 2013 and 2014 and March 2013 (1)	
Number of granted options	n/a	n/a	n/a
Deadline for options to become redeemable (Deadline to receive the incentive)		December 2015 and March 2016(2)	
Deadline for redeeming options	n/a	n/a	n/a
Grace period for stock transfer	n/a	n/a	n/a
Fair option price on grant date (Incentive Value)		3,273,745.45	3,273,745.45

(1) In January 2013 and 2014 the ILP and PAV cycles began and in March 2013 the Matching cycle began.

(2) On December 31, 2015 the ILP cycle beginning in 2013 January ended, as well as the first window of anticipation of the PAV cycle beginning in 2014 and in March 2016, the Matching cycle ended.

Table of Contents

Stock-based compensation paid in the fiscal year ended on December 31, 2015

	Executive Board	Statutory Board	Total
Grant of stock options (Incentive Grant)			
Grant date (Grant date of incentive)		January and March 2012(1)	
Number of granted options	n/a	n/a	n/a
Deadline for options to become redeemable (Deadline to receive the incentive)		December 2014 and March 2015(2)	
Deadline for redeeming options	n/a	n/a	n/a
Grace period for stock transfer	n/a	n/a	n/a
Fair option price on grant date (Incentive Value)		1,596,622.42	1,596,622.42

(1) In January 2012 the ILP cycle began and in March 2012 the Matching cycle began.

(2) On December 31,2014 the ILP cycle ended and in March 2015 the Matching cycle ended.

Stock-based compensation paid in the fiscal year ended on December 31, 2014

	Executive Board	Statutory Board	Total
Grant of stock options **(Incentive Grant)**			
Grant date (Grant date of incentive)		January and March 2011 (1)	
Number of granted options	n/a	n/a	n/a
Deadline for options to become redeemable		December 2013 and March 2014 (2)	

Table of Contents

Deadline for redeeming options	n/a	n/a	n/a
Grace period for stock transfer	n/a	n/a	n/a
Fair option price on grant date		1,857,202.70	1,857,202.70
(Incentive Value)			

(1) In January 2011 the ILP cycle began and in March 2011 the Matching cycle began.

(2) On December 31,2013 the ILP cycle ended and in March 2014 the Matching cycle ended.

Table of Contents

Stock-based compensation paid in the fiscal year ended on December 31, 2013

	Executive Board	Statutory Board	Total
Grant of stock options (Incentive Grant)			
Grant date (Grant date of incentive)		January and March 2010 (1)	
Number of granted options	n/a	n/a	n/a
Deadline for options to become redeemable		December 2012 and March 2013 (2)	
Deadline for redeeming options	n/a	n/a	n/a
Grace period for stock transfer	n/a	n/a	n/a
Fair option price on grant date (Incentive Value)		2,537,872.00	2,537,872.00

(1) In January 2010 the ILP cycle began and in March 2011 the Matching cycle began.

(2) On December 31,2012 the ILP cycle ended and in March 2013 the Matching cycle ended.

Table of Contents

13.6 Information on outstanding options held by the Executive Board and the Statutory Board

Not applicable, since the remuneration plans based on Company shares do not include the granting of options for the purchase of shares, since they are based on the quote for Company shares or the compensation received by Company managers to define the cash amount to be paid as incentive to executive directors. For more information, see items 13.4 and 13.5 in this Reference Form

Table of Contents

13.7. Options redeemed and shares delivered relative to stock-based remuneration for the Executive Board and the Statutory Board

Not applicable, since the remuneration plans based on Company shares do not include the granting of options for the purchase of shares, since they are based on the quote for Company shares or the compensation received by Company managers to define the cash amount to be paid as incentive to executive directors. For more information, see items 13.4 and 13.6 in this Reference Form.

Table of Contents

13.8. Relevant information aiming at a broader understanding of data presented under items 13.5 through 13.7 above - pricing method used for stock and option values

Not applicable. See items 13.4 and 13.7 in this Reference Form.

Table of Contents

13.9 Participation in stock, quotas, or other convertible securities held by executive officers and fiscal council members by board or committee

a. The number of stocks or quotas issued by the Company, held directly or indirectly, in Brazil or overseas, and other stock-convertible securities by its board of directors members, statutory directors, or fiscal council members, grouped by board or committee, on the closing day of the last accounting reference period:

Shares issued by VALE S.A.

Stockholders 12/31/2015	Common	Preferred
Board of Directors	6,700	15,780
Executive Officers	9,300	1,593,367(*)
Fiscal Council	0	31,650
Total	**16,000**	**1,640,797**

[*] Including 136,919 VALE.P shares owned as *American Depositary Receipts* (ADRs), at the New York Stock Exchange.

b. The number of stocks or quotas and other securities convertible into shares or quotas issued by the direct or indirect controllers of the Company, held directly or indirectly, either in Brazil or overseas, by its board members, statutory directors, or fiscal council members, grouped by board or committee, on the closing day of the last accounting reference period:

Table of Contents

Shares issued by VALEPAR S.A.

Stockholders 12/31/2015	Common	Preferred
Board of Directors	0	0
Executive Officers	0	0
Fiscal Council	0	0
Total	**0**	**0**

Shares issued by BNDES Participações S.A.

Stockholders 12/ 31/2015	Common	Preferred
Board of Directors	0	0
Executive Officers	0	0
Fiscal Council	0	0
Total	**0**	**0**

Table of Contents

Shares Issued by LITEL PARTICIPAÇÕES S.A.

Stockholders 12/31/2015	Common	Preferred
Board of Directors	0	0
Executive Officers	0	0
Fiscal Council	0	0
Total	**0**	**0**

Shares issued by BRADESPAR S.A.

Stockholders 12/ 31/2015	Common	Preferred
Board of Directors	300	59,437
Executive Officers	0	0
Fiscal Council	0	0
Total	**300**	**59,437**

Table of Contents

Shares issued by MITSUI & CO., LTD

Stockholders 12/31/2015	Common	Preferred
Board of Directors	31,472	0
Executive Officers	0	0
Fiscal Council	0	0
Total	**31,472**	**0**

Shares issued by ELETRON S.A

Stockholders 12/31/2015	Common	Preferred
Board of Directors	0	0
Executive Officers	0	0
Fiscal Council	0	0
Total	**0**	**0**

Shares issued by OPPORTUNITY ANAFI PARTICIPAÇÕES S.A

Stockholders 12/31/2015	Common	Preferred
Board of Directors	0	0
Executive Officers	0	0
Fiscal Council	0	0
Total	**0**	**0**

Table of Contents

Shares issued by BELAPART S.A

Stockholders 12/31/2015	Common	Preferred
Board of Directors	0	0
Executive Officers	0	0
Fiscal Council	0	0
Total	**0**	**0**

Table of Contents

Shares issued by VALETRON S.A.

Stockholders 12/31/2015	Common	Preferred
Board of Directors	0	0
Executive Officers	0	0
Fiscal Council	0	0
Total	**0**	**0**

c. The number of stocks or quotas and other securities convertible into shares or quotas issued by the Company s subsidiaries or companies under common control, held directly or indirectly, either in Brazil or overseas, by its board members, statutory directors, or fiscal council members, grouped by board or committee, on the closing day of the last accounting reference period:

Shares issued by MRS LOGÍSTICA S.A.

Stockholders 12/31/2015	Common	Preferred
Board of Directors	0	0
Executive Officers	0	0
Fiscal Council	0	0
Total	**0**	**0**

Table of Contents

Shares issued by PT VALE INDONESIA TBK

Stockholders 12/31/2015	Common	Preferred
Board of Directors	0	0
Executive Officers	0	0
Fiscal Council	0	0
Total	**0**	**0**

Table of Contents

13.10 Information on Private Pension Funds granted to members of the executive board and the statutory board

Pursuant to contract provisions, the Company pays for both the employer s and the employee s share, up to 9% of the fixed compensation, to Valia Fundação Vale do Rio Doce de Seguridade Social (Vale do Rio Doce Social Security Foundation), or to any other private pension fund chosen by the Statutory Board member.

At Valia, the minimum required age for a retirement plan is 45 years of age, after having contributed for the given plan for a minimum grace period of five years.

Valia Vale do Rio Doce Social Security Foundation

	Executive Board	Statutory Board	Total
Total number of members (1)	21.00	8.00	29.00-
Number of paid members (2)	0.00	7.00	7.00
Plan name		Benefits Plan Vale Mais (Plano de Benefício Vale Mais)	
Number of managers that are eligible for retirement benefits		5, of which (i) 3 with Normal Retirement Income; and (ii) 1 with Early Retirement Income; and (iii) 1 with Differed Benefit Income through Retirement.(3)	
Eligibility for early retirement		• be at least 45 years old; • have at least 5 years of uninterrupted participation in VALIA, counting	

Table of Contents

	from the most recent date of entering the Vale Mais Plan (except for participants migrating from the Defined Benefit Plan (Benefits Plan now closed) to the Vale Mais Plan; • have rescinded the labor contract with the employer or have lost the position of administrator.
Updated value of accumulated contributions to social security and pension plan up until the closing of the last accounting reference period, minus amounts paid by managers	R$ 11,390,825.81 (4)
Total accumulated amount of contributions paid throughout the last accounting reference period, minus amounts paid by managers	R$ 1,574,639.67(5)

Table of Contents

Eligibility for advanced redemption and conditions	• The active participant who, on the date of rescission of his/her labor contract with the employer or on the date of loss of the position of administrator, does not opt to become an independent contributor or associate, nor opts for the institution of portability and is not enjoying benefits from the Vale Mais Plan, is eligible to receive the redemption. The amount of the redemption shall be equal to: 100% of the participant s account + 1% of the employer s account per month of normal, ordinary contribution made by the participant to the Vale Mais Plan up to a maximum of 80% of this account.

(1) The total number of members corresponds to the average over the year of the number of members of the administrative entity as determined monthly, under the terms in item 13.2

(2) Corresponds to the number of executive officers and board members, as applicable, enrolled in the benefits plan, in accordance with Circular Letter CVM/SEP 02/2016.

(3) (2) One of the managers is entitled to two (2) benefits, one (1) Normal Retirement Income and one (1) Differed Benefit Income through Retirement.

Table of Contents

(4) Amount corresponding to the sum of the Accounts of the Employer belonging to the participants on 12/31/2015.

(5) Amount corresponding to the sum of the ordinary contributions made by the employer in the name of each one of the participants during the fiscal year of 2015

	Executive Board	Statutory Board	Total
Total number of members (1)	21.00	8.00	29.00-
Number of paid members (2)	0.00	1.00	1.00
Plan name	Benefits Plan Valiaprev		
Number of managers that are eligible for retirement benefits		0.00	
Eligibility for early retirement		• be at least 45 years old; • have at least 5 years of uninterrupted participation in VALIA, counting from the most recent date of entering the Valiaprev Plan; • have rescinded the labor contract with the employer or have lost the position of administrator.	
Updated value of accumulated contributions to social security and pension plan up until the closing of the last accounting reference period, minus amounts paid by managers		R$ 805,386,16(4)	

Table of Contents

Total accumulated amount of contributions paid throughout the last accounting reference period, minus amounts paid by managers	R$ 204,974.57(5)
Eligibility for advanced redemption and conditions	• The active participant who, on the date of rescission of his/her labor contract with the employer or on the date of loss of the position of administrator, does not opt to become an independent contributor or associate, nor opts for the institution of portability and is not enjoying benefits from the Valiaprev Plan, is eligible to receive the redemption.
	The amount of the redemption shall be equal to: 100% of the participant s account + 1% of the employer s account per month of normal, ordinary contribution made by the participant to the Valiaprev Plan up to a maximum of 80% of this account.

Table of Contents

(1) The total number of members corresponds to the average over the year of the number of members of the administrative entity as determined monthly, under the terms in item 13.2

(2) Corresponds to the number of executive officers and board members, as applicable, enrolled in the benefits plan, in accordance with Circular Letter CVM/SEP 02/2016.

(3) Amount corresponding to the sum of the Accounts of the Employer belonging to the participants on 12/31/2015.

(4) Amount corresponding to the sum of the ordinary contributions made by the employer in the name of each one of the participants during the fiscal year of 2015.

Table of Contents

13.11 Maximum, minimum, and average individual compensation of the executive board, statutory board, and the fiscal board

Justification for not filling out this table.

Information not disclosed due to legal decision, which is that, the award granted in the case of ordinary proceedings No. 0002888-21.2010.4.02.5101 processed by the 5th Circuit Court of Federal Justice of Rio de Janeiro made final the injunction previously granted to IBEF/RJ, (to which Vale and the company executives are linked), determining that CVM shall be absent from (a) deploying the requirement in sub-item 13.11 in exhibit 24 to CVM Instruction 480, (b) applying any penalty related to failure to comply with this requirement by IBEF associates. CVM appealed the decision. On February 6, 2014, the case was sent to the Federal Regional Court of the 2nd Region to be tried as an appeal with no suspension effects. Thus, at least until CVM s appeal is tried, the decision continues to have the aforementioned effects.

Table of Contents

13.12 Compensation or indemnity mechanisms applicable to managers in the occurrence of dismissal or retirement

The contracts signed by members of the Company s Statutory Board have a provision for indemnity for contract rescission, non-renewal or retirement, provided that such events are generated by the Company. In the latter case, the following amounts and conditions are provided for: (i) a compensatory indemnity for each and every amount due, corresponding to 6 times the amount of the last fixed monthly compensation paid to Executive Directors and 12 times for the President, as well as the payment of the indemnity corresponding to 2 fixed annual salaries, to be paid in 8 quarterly equal payments conditioned to a non-compete agreement to be in force for the following 24 months.

No other type of contract agreement is drawn with members of the Executive Board or the Fiscal Board. The same applies to any other types of contract agreements, life insurance policies or any other instruments that might underlie compensation or indemnity mechanisms in case an executive is dismissed.

For details related to insurance policies related to the payment or reimbursement of expenses incurred by Company managers, see item 12.11 in this Reference Form.

Table of Contents

13.13 **Percentage of total compensation held by managers and members of the fiscal board that are somehow connected to controllers.**

Board or Committee	2015	2014	2013
Executive Board	72.00%	66.00%	74.00%
Statutory Board	0.00%	0.00%	0.00%
Fiscal Board	0.00%	0.00%	15.00%

Table of Contents

13.14 - Compensation of administrators and members of the fiscal board, grouped by board, received for any purpose other than the function they perform.

No payments in the last three accounting reference periods of any other type rather than for the function they perform were made to any member of the Executive Board, of the Statutory Board, or the Fiscal Board.

Table of Contents

13.15 Compensation paid to administrators and members of the fiscal board acknowledged in the results released by direct or indirect affiliates, subsidiaries or companies under common control

Fiscal Year 2015 Compensation paid due to position held at the issuer

	Executive Board	Statutory Board	Fiscal Board	Total
Direct and Indirect Controlling Entities	0	0	0	0
Companies Controlled by The Company	0	Total: R$ 4,830,798.06 Annual Compensation: R$ 4,453,137.18 Direct and Indirect Benefits: R$ 377,660.88		R$ 4,830,798.06
Companies Under Common Control	0	0	0	0

Table of Contents

Fiscal Year 2014 Compensation paid due to position held at the issuer

	Executive Board	Statutory Board	Fiscal Board	Total
Direct and Indirect Controlling Entities	0	0	0	0
Companies Controlled by The Company	0	R$ 2,271,308.13 Annual Compensation: R$ 1,293,162.00 Direct and Indirect Benefits: R$ 978,146.13		R$ 2,271,308.13
Companies Under Common Control	0	0	0	0

Fiscal Year 2013 Compensation paid due to position held at the issuer

	Executive Board	Statutory Board	Fiscal Board	Total
Direct and Indirect Controlling Entities	0	0	0	0
Companies Controlled by The Company	0	R$ 2,632,135.00 Annual Compensation: R$ 1,462,498.00 Direct and Indirect Benefits: R$ 1,169,637.00		R$ 2,632,135.00
Companies Under Common Control	0	0	0	0

Table of Contents

13.16 Other relevant information

Proposal for global compensation

The proposal for global compensation of the managers for the fiscal year 2016 was approved by the Annual and Extraordinary Shareholders Meetings (AGO/E) held, jointly, on April 25, 2016, fixing as global sum the amount of up to R$ 90,372,853.00 (ninety million, three hundred and seventy two thousand, eight hundred and fifty-three reais), to be distributed by the Executive Board, taking into account the provisions in current law and in the Articles of Incorporation of Vale. It should be emphasized that the amount proposed and approved considered **the responsibilities of the administrators, the time devoted to their positions, the competence, the professional reputation, and the value of their services in the market. It is important to note that the proposal approved for overall compensation considered the remuneration of the members of the Advisory Committees and charges related to that remuneration, an amount that is not shown in item 13.2 above**.

The above amount comprises: (I) the proposal of remuneration of members of the Executive Board, the Statutory Board and members of the Fiscal Council of up to R$89,768,052.98 (eighty nine million seven hundred and sixty eight thousand and fifty-to reais and ninety-eight cents), which is comprised by (a) R$6,966,663.12 (six million nine hundred and sixty-six thousand and six hundred and sixty-three reais and twelve cents) corresponding to the fixed compensation of the members of the Executive Board, and of the members of the Fiscal Board, under the terms of Act No. 6404/76, Art. 163, net of social fees under Vale s responsibility; (b) up to R$ 27,620,355.32 (twenty seven million six hundred and twenty thousand three hundred and fifty-five reais and thirty-two cents) corresponding to the fixed and variable compensation of the Executive Directors, which takes into account an Executive Board comprised by 8 Executive Directors, net of social fees under Vale s responsibility, and excluding direct and indirect benefits. The individual and fixed compensation is compatible with the values paid to the executive members of similar companies, while the payment of the variable compensation, corresponding to the bonus and the long-term incentive, is linked to the fulfillment of predetermined goals, based on the performance of the Company. Thus, the payment of the variable compensation is equivalent to the partial or total fulfillment of the predetermined goals, and they may also be not owed in the event of not reaching such goals; (c) up to R$55,191,034.54 (fifty five million one hundred and ninety one thousand and thirty-four reais and fifty-four cents) corresponding to taxes and charges that have an incidence over the compensation and the responsibility of Vale, and also, benefits of any nature; and realized amounts related to the termination of the position and (II) the proposal corresponding to the remuneration of the members of the Advisory Committees and charges related to that remuneration, up to R$ 604,800.02 (six hundred and four thousand and eight hundred reais and two cents).

Find below additional information relative to the proposal of global remuneration of the Company, approved by the AGO/E, as mentioned above:

Table of Contents

a) Period applicable to the remuneration proposal: The Management proposal refers to the period between January 1 and December 31, 2016, which is the fiscal year.

b) Comments on the values approved in the Management Proposal in 2015 and the values related to the remuneration of Managers, effectively paid: in Ordinary and Extraordinary Shareholders Meetings held on April 17, 2015 the amount of R$ 107,110,935.81 (one hundred and seven million, one hundred and ten thousand, and nine hundred and thirty-five reais, eighty-one cents) which included remuneration to be paid to members of the Executive Board, the Fiscal Council, the Executive Office, as well as members of the Advisory Committees. Vale clarifies that regarding fiscal year 2015, the amount related to remuneration of members of the Executive Board, the Fiscal Council, the Board, as well as members of the Advisory Committees, the amount of R$99,867,490.16 (ninety-nine million eight hundred sixty-seven thousand four hundred and ninety reais and sixteen cents) was effectively paid. The difference between the initially proposed amount and the effectively paid amount is mainly due to the smaller payment of bonus and the non-payment related to 3 positions in the Executive Board and, consequently, the social fees related to such amounts.

c) Comments on eventual differences between the amounts in the current proposal and the previous proposal and those in item 13 in Vale s Reference Form: The global remuneration of members of the Executive Board, the Fiscal Council, the Executive Office, as well as members of the Advisory Committees for the fiscal year ending in 2016 corresponds to R$90,372,853.00 (ninety million three hundred and seventy-two thousand and eight hundred and fifty-three reais). This amount is 15.63% lower than the amount proposed for fiscal year 2015 equal to R$ 107,110,935.81 (one hundred and seven million, one hundred and ten thousand, and nine hundred and thirty-five reais, eighty-one cents) due to the failure to meet goals set forth for fiscal year 2013, thus resulting in the non-payment of bonus to the Executive Office, and consequent social fees in 2016.

14.1 Human resources description

(a) **a) the number of company employees (total, by groups based on activity, and by geographic location)**

(b)

The table below shows the number of employees of the Company and its controlled companies as of December 31, 2013, 2014, and 2015:

As of December 31

	2013	2014	2015
Total number of employees	**83,286**	**76,531**	**74,098**
By business area			
Ferrous	31,799	30,314	28,134
Non ferrous	15,772	15,618	15,736
Coal	2,707	2,137	2,203
Logistics	19,884	14,345	13,758
Fertilizers	6,772	6,773	9,181

Table of Contents

Others (1)	6,352	7,344	5,086
By location			
Brazil	66,165	59,765	57,850
Canada	6,645	6,666	6,767
Indonesia	3,208	3,138	3,167
New Caledonia	1,355	1,342	1,336
Australia	952	364	318
The United States	7	7	6
China	154	155	137
Mozambique	2,226	2,341	1,938
Peru	770	801	788
Colombia	0	0	0
Chile	16	10	7
Other (2)	1,788	1,942	1,784

(1) Includes the following: Exploration, Energy, Engineering, Institutes and Foundations, Project Management, General Services and Corporate Services.

(2) Includes the following: Argentina, Austria, India, Japan, Korea, Malawi, Malaysia, Oman, Paraguay, Singapore, Switzerland, United Arab Emirates, United Kingdom.]

Table of Contents

b. Number of outsourced employees (total, total, by groups based on activity and by geographic location)

The table below shows the number of outsourced employees of the Company and its controlled companies for the financial years closed December 31, 2013, 2014, and 2015 by activity and by geographic location:

	2013	2014	2015
Number of outsourced personnel	**129,096**	**129,920**	**92,242**
By business area			
Ferrous	12,954	21,041	12,606
Non ferrous	14,083	13,937	12,421
Coal	20,113	15,338	6,998
Logistics	13,653	8,889	7,350
Fertilizers	10,583	10,076	7,479
Others (1)	57,710	60,639	45,388
By location			
Brazil	93,335	98,308	72,403
Canada	7,574	7,385	3,783
Indonesia	2,483	2,429	4,262
New Caledonia	1,990	1,784	1,576
Australia	258	249	106
United States	0	0	0
China	20	20	19
Mozambique	11,754	13,634	7,243
Peru	1,111	1,009	1,150
Colombia	0	0	0
Chile	56	21	12
Other (2)	10,515	5,081	1,688

Table of Contents

(1) Includes the following: Exploration, Energy, Engineering, Institutes and Foundations, Project Management, and Corporate Services.

(2) Includes the following: Argentina, Cook Islands, Japan, Liberia, Malawi, Malaysia, Oman, Paraguay, Singapore, and Switzerland

c. Employee turnover index

The index of employee turnover at the Company and its subsidiaries (churning index) for the financial years ending in 2013, 2014, and 2015 was 6.6%, 8.1%, and 8.7%, respectively. The churning index is calculated based on data from Vale S.A. and its controlled companies in the following countries: Brazil, Canada, Indonesia, New Caledonia, Australia, United States of America, China, Mozambique, Peru, Colombia, Chile, Argentina, Austria, Dubai, India, Japan, Korea, Malawi, Malaysia, Oman, Paraguay, The Philippines, Singapore, Switzerland, United Kingdom, and Zambia.

Table of Contents

14.2 Relevant changes Human Resources

Due to the reduce interest held by Vale in General Load companies in 2014, the results of such companies is not consolidated in the total number of employees, own or third party.

In fiscal year 2015 there was a reduction of approximately 29% in the number of outsourced personnel at Vale, which was due mainly to (i) demobilization, (ii) process optimization, as well as productivity optimization in the Ferrous segment, (iii) reduction of outsourced personnel in project in Africa, and (iv) and insourcing of 2,389 employees into Vale Fertilizantes in 2015.

The insourcing mentioned above was the main factor responsible for the increase in the number of employees in fiscal year ended December 31, 2015.

Table of Contents

14.3 Description of Company employee remuneration policies

Salaries and benefits adopted by Vale and its subsidiaries are usually established considering compensation and benefits practices of each location where the Company operates.

a. Salary and variable remuneration policy

Vale follows the practice already adopted in recent years to carry out comparative research on remuneration and offers all its own employees a salary equal to or higher than the legal minimum practiced in each location. Additionally, through compensation, Vale promotes the engagement of its employees and increasingly encourages performance through different rewards, in order to strengthen the culture of constant pursuit of results. The remuneration package also allows alignment of goals and individual results with Vale s.

In Vale s own units, performance assessment for the variable short term compensation (annual) is based on annual goals aligned to Company strategy and budget defined by the Board of Directors. These evaluations are conducted through an interactive process between employees and their managers, as well as using computer systems, in which the results are logged. In this program, employees are rewarded for achieving and/or exceeding their goals, and also according to results found by the main corporate indicator (Operational Cash Flow subtracted from Current Investments). The goal schedule of each employee is comprised by categories, including sustainability, financial and economic, operational excellence, and area-specific goals, and at the beginning of each year, results and goals of the previous year are determined. Each result achieved in the goals represents a number of points and the sum of all points is one of the factors that, with Vale s result, will define the employee short-term variable compensation.

Since November 2007, Vale has signed collective agreements valid for two years (except for the last 2015/2016 agreement, which was executed with a one-year term) with all trade unions representing 100% of the total number of Company employees in Brazil. As a result of the agreements, for the period 2011-2013 and 2013/2015, there was a salary increase of 6.0% in 2013, 5.4% in 2014, and there was no increase in 2015. In Canada, Australia, Indonesia, New Caledonia, Mozambique, Peru, England, and Oman, Vale negotiates collective agreements with workers trade unions, with a duration of typically between one and five years.

Certain employees who are part of the management framework of Vale may also participate in long-term incentives, depending on eligibility for each plan, such as:

(i) Matching, program based on shares with the objective of encouraging the feeling of owning the Company and increasing the ability to attract and retain managers, where the qualified employee may acquire, with his own funds, preferred shares of Vale (time 0), and if the employee holds these shares, as well as maintains its employment relation with Vale for a period of three (3) years, additionally to complying with the requirements

defined in the annual program manual, he will be entitled to receiving from Vale the equivalent to the same number of shares purchased at time 0. For more information on Matching, see item 13.4 in this Reference Form.;

(ii) Long Term Incentive ILP, program that grants virtual shares of Vale to the leaders and considers the performance related to the Total Shareholder Return (TSR) compared with a defined group of comparable companies (*peer group*), during the three (3) year cycle. The last year of concession of the ILP was the cycle beginning in 2013, but the terms and conditions of the ILP are still applicable to its beneficiaries. Starting in 2014, the ILP was replaced by the Virtual Shares Program PAV, a program also based on Vale common virtual shares, with operation and conditions similar to the ILP, where participants have the chance of receiving, in a four (4) year cycle, an amount equivalent to the market value of a specific number of Vale common shares. For more information about the ILP and the PAV, see item 13.4 in this Reference Form.

(iii) Project Bonus: long-term program aimed at capital project leaders based on project performance and sustainability.

The salary and variable remuneration policy for non-statutory directors is described in item 13 of this Reference Form.

Table of Contents

b. Benefits policy

One of Vale s guidelines is to guarantee that the benefits are offered consistently at the different locations where the company is present, compliant with the goals of each business, the corporate human resources philosophy and strategy, as well as respecting legal requirements of the country and considering local market conditions. Vale offers its employees a compensation and benefits package that contributes to the attraction, retention, and engagement strategy.

Vale offers to 100% of its employees, medical assistance and life insurance benefits, and for the most part of its employees Vale offers insurance against personal accidents, private pension, transport voucher, education, and meal at work, food voucher and Employee Assistance Program.

Regarding pension funds, Vale recommends that in locations where the financial market allows long-term asset management in a sustainable manner, that the definite contribution model is offered.

c. Characteristics of compensation plans based in shares for non-administrative employees

Compensation plans based in shares described in item 13.4 of this Reference Form include the Company s non-statutory directors, as well as other leadership levels, according to qualification rules applicable to each plan. The characteristics of these plans are described in item 13.4 of this Reference Form.

Table of Contents

14.4 - Description of the relationships between the issuer and trade unions, indicating whether there have been stoppages or strikes in the last three fiscal years

Vale builds a harmonious relationship with trade unions all around the world. That covers approximately 50 trade unions in Brazil and 12 trade unions in the rest of the world. Today, there are collective agreements in Brazil, Canada, the United Kingdom, Peru, Mozambique, Australia, New Caledonia, Indonesia and, Oman. Until the date of this Reference Form, all collective negotiations that started after 2010 have come to an agreement, with no conflict and/or strike.

Also note that in the last three fiscal years, there has been no stoppages or strikes affecting the activities of the Company or its subsidiaries.

Since 2005, employees elect, by direct election, a permanent member for the Board of Directors and the respective deputy member. Elections are a result of a joint effort between company and unions.

In Brazil, in every semester since 2010, the company meets with the unions to discuss themes such as Health and Safety in the Workplace . Sometimes, Brazilian Central Unions, linked to the trade unions that represent Vale s employees, also take part in these meetings.

15.1 / 15.2 Shareholding Position

Vale S.A.

Shareholder	Nationality	State	Legal Representative	Legal Representative s CPF/CNPJ	CPF/CNPJ	Common Shares Quantity	Common Shares %	Preferred Shares Class A Quantity	Preferred Shares Class A %	Preferred Shares Special Class Quantity	Preferred Shares Special Class %	Tota Quar
Valepar S.A.	Brazilian	RJ	NA	NA	01.772.413/0001-57	1,716,435,045	53.352021	20,340,000	1.003390	0	0	20,3
BNDES Participações S.A.	Brazilian	RJ	NA	NA	00.383.281/0001-09	206,378,882	6.414883	66,185,272	3.264978	0	0	66,1
Capital Research Global Investors	American		JP Morgan DTVM Citi DTVM	33,851,205 /0001-30 33,868,597 /0001-40		0	0,000000	204,367,633	10.081636	0	0	204,3
Capital Group International Inc.	American		JP Morgan DTVM Citi DTVM	33,851,205/0001-30 33,868,597 /0001-40		0	0,000000	202,272,464	9.978279	0	0	202,2
Treasury			NA	NA		31,535,402	0.980216	59,405,792	2.930540	0	0	59,4
Others			NA	NA		1,262,839,073	39.252880	1,4474,556,545	72.741177	12	100	1,474,5
Total						**3,217,188,402**	**100**	**2,027,127,706**	**1000**	**12**	**100**	**2,027,1**

554

Table of Contents

Valepar S.A.

Shareholder	Nationality	State	CPF/CNPJ	Common Shares Quantity	Common Shares %	Preferred Shares Quantity	Preferred Shares %	Total Quantity	Total %	Member of the shareholders agreement	Controlling shareholder
Litel Participações S.A.	Brazilian	RJ	00,743,065/0001-27	637,443,857	49.01%	200,864,272	71.41%	838,308,129	52.99%	Yes	Yes
Litel Participações S.A.	Brazilian	RJ	05.495.546/0001-84	0	0	80,416,931	28.59%	80,416,931	5.08%	Yes	Yes
Bradespar S.A.	Brazilian	SP	03.847.461/0001-92	275,965,821	21.21%	0	0.00%	275,965,821	17.44%	Yes	Yes
Mitsui & Co., Ltd	Japanese		05.466.338/0001-57	237,328,059	18.24%	0	0.00%	237,328,059	15.00%	Yes	Yes
BNDES Participações S.A.	Brazilian	RJ	00.383.281/0001-09	149,787,385	11.51%	0	0.00%	149,787,385	9.46%	Yes	Yes
Eletron S.A.	Brazilian		00.514.998/0001-42	380,708	0.03%	0	0.00%	380,708	0.02%	Yes	Yes
Total				**1,300,905,830**	**100.00%**	**281,281,203**	**100.00%**	**1,582,187,033**	**100.00%**		

Litel Participações S.A. CNPJ: 00.743.065/0001-27

Shareholder	Nationality	State	CPF/CNPJ	Common Shares Quantity	Common Shares %	Preferred Shares Quantity	Preferred Shares %	Total Quantity	Total %	Member of the shareholders agreement	Controlling shareholder	Date of La Change
BB Carteira Ativa	Brazilian		01.578.476/0001-77	193,740,121	78.40	28,385,377	100.00	222,125,498	80.62%	No	Yes	12/31/201
Others				53,388,224	21.60	627	40.00	53,388,851	19.38%			
Total				**247,128,345**	**100.00**	**28,386,004**	**100.00**	**275,514,349**	**100.00**			

Table of Contents

Litela Participações S.A. CNPJ: 05.495.546/0001-84

Shareholder	Nationality	State	CPF/CNPJ	Common Shares Quantity	Common Shares %	Total Preferred Shares Quantity	Total Preferred Shares %	Total Quantity	Total %	Member of the shareholders agreement	Controlling shareholder	Date of Last Change
Litel Participações S.A.	Brazilian		00.743.065/0001-27	28,386,273	100.00	28,386,273	100.00	28,386,273	100.00	No	Yes	12/31/2015
Others				1	0.00	1	0.00	1	0.00			
Total				28,386,274	100.00	28,386,274	100.00	28,386,274	100.00			

Bradespar S.A. CNPJ: 03.847.461/0001-92

Shareholder	Nationality	State	CPF/CNPJ	Common Shares Quantity	Common Shares %	Preferred Shares Quantity	Preferred Shares %	Total Quantity	Total %	Member of the shareholders agreement	Controlling shareholder	Date of Last Change
NCF Participações S.A.	Brazilian	SP	04.233.319/0001-18	30,388,376	24.80	2,235,627	0.98	32,624,003	9.33	No	Yes	12/31/201
Cidade de Deus Cia. Cial. de Participações S.A.	Brazilian	SP	61.529.343/0001-32	44,883,224	36.63	300,960	0.13	45,184,184	12.93	No	Yes	12/31/201
Fundação Bradesco	Brazilian	SP	60.701.521/0001-06	18,179,304	14.84			18,179,304	5.20	No	Yes	12/31/201
Others				29,072,145	23.73	224,488,309	98.89	253,560,454	72.54			12/31/201
Total				**122,523,049**	**100.00**	**227,024,896**	**100.00**	**349,547,945**	**100**			

Cidade de Deus Cia. Cial. de Participações S.A. CNPJ: 61.529.343/0001-32

Shareholder	Nationality	State	CPF/CNPJ	Common Shares Quantity	Common Shares %	Preferred Shares Quantity	Preferred Shares %	Total Quantity	Total %	Member of the shareholders agreement	Controlling shareholder	Date Las Chan
Nova Cidade de Deus Participações S.A.	Brazilian	SP	04.866.462/0001-47	3,330,454,557	45.05	0	0	3,330,454,557	45.05	No	Yes	12/31/2
Fundação Bradesco	Brazilian	SP	60.701.521/0001-06	2,462,446,247	33.31	0	0	2,462,446,247	33.31	No	Yes	12/31/2
Lina Maria Aguiar	Brazilian	SP	017.080.078-49	631,233,924	8.54	0	0	631,233,924	8.54	No	Yes	12/31/2
Lia Maria Aguiar	Brazilian	SP	003.692.768-68	496,778,330	6.72	0	0	496,778,330	6.72	No	Yes	12/31/2

Others	471,793,267	6.38	0	0	471,793,267	6.38	12/31/2
Total	**7,392,706,325**	**100.00**	**0**	**0**	**7,392,706,325**	**100.00**	

Table of Contents

Nova Cidade de Deus Participações S.A. **CNPJ: 04.866.462/0001-47**

Shareholder	Nationality	State	CPF/CNPJ	Common Shares Quantity	Common Shares %	Preferred Shares Quantity	Preferred Shares %	Total Quantity	Total %	Member of the shareholders agreement	Controlling shareholder	Date of Last Change
Fundação Bradesco	Brazilian	SP	60.701.521/0001-06	132,647,429	46.30	303,570,305	100	436,217,734	73.93	No	Yes	12/31/2015
BDD Participações S.A.	Brazilian	SP	07.838.611/0001-52	153,837,939	53.70	0	0	153,837,939	26.07	No	Yes	12/31/2015
Total				286,485,368	100.00	303,570,305	100	590,055,673	100.00			4

BBD Participações S.A. **CNPJ: 07.838.611/0001-52**

Shareholder	Nationality	State	CPF/CNPJ	Common Shares Quantity	Common Shares %	Preferred Shares Quantity	Preferred Shares %	Total Quantity	Total %	Member of the shareholders agreement	Controlling shareholder	Date of Last Change
Lázaro de Mello Brandão	Brazilian	SP	004.637.528-72	12,272,123	6.96	0	0	12,272,123	3.97	Yes	No	12/31/201
NCD Participações Ltda	Brazilian	SP	48.594.139/0001-37	0	0	70,854,834	53.33	70,854,834	22.92	Yes	No	12/31/201
Treasury				87,736,346	49.79	12,558,187	9.45	100,294,533	32.45	No	No	12/31/201
Others				76,197,830	43.25	49,457,590	37.22	125,655,420	40.66			12/31/201
Total				**176,206,299**	**100.00**	**132,870,611**	**100**	**309,076,910**	**100.00**			

NCF Participações S.A. **CNPJ: 04.233.319/0001-18**

Shareholder	Nationality	State	CPF/CNPJ	Common Shares Quantity	Common Shares %	Preferred Shares Quantity	Preferred Shares %	Total Quantity	Total %	Member of the shareholders agreement	Controlling shareholder	Da
Fundação Bradesco	Brazilian	SP	60.701.521/0001-06	283,571,490	25.13	1,005,739,284	100.00	1,289,310,774	60.41	No	Yes	12
Cidade de Deus Cia. Cial. de Participações S.A.	Brazilian	SP	61.529.343/0001-32	843,211,787	74.72	0	0	843,211,787	39.51	No	Yes	12
Nova Cidade de Deus Participações S.A.	Brazilian	SP	04.866.462/0001-47	1,688,246	0.15	0	0	1,688,246	0.08	No	Yes	12
Total				**1,128,471,523**	**100.00**	**1,005,739,284**	**100.00**	**2,134,210,807**	**100.00**			

557

Table of Contents

BNDES Participações S.A. - 00.383.281/0001-09

Shareholder	Nationality	CPF/CNPJ	Common Shares Qty	Common Shares %	Total Shares Qty	Total Shares %	Shareholders Agreement	Controller	Last Change
Banco Nacional de Desenvolvimento Econômico e Social BNDES	Brazilian	33.657.248/0001-89	1	100.00	1	100.00	No	Yes	12/31/2015
Total			**1**	**100.00**	**1**	**100.00**			

Eletron S.A. CNPJ:00.514.998/0001-42

Shareholder	Nationality	State	CPF/CNPJ	Common Shares Quantity	Common Shares %	Preferred Shares Quantity	Preferred Shares %	Total Quantity	Total %	Member of the shareholders agreement	Controlling shareholder	Date of Last Change
Opportunity Anafi Participações S.A.	Brazilian	RJ	02.992.366/0001-10	13,109,294	99.9917	0	0	13,109,294	99.99	No	Yes	12/31/2015
Others				1,083	0.0083	0	0	1,083	0.01			
Total				**13,110,377**		**0**	**0**	**13,110,377**	**100%**			

Opportunity Anafi Participações S.A. CNPJ: 02.992.366/0001-10

Shareholder	Nationality	State	CPF/CNPJ	Common Shares Quantity	Common Shares %	Preferred Shares Quantity	Preferred Shares %	Total Quantity	Total %	Member of the shareholders agreement	Controlling shareholder	Date of Last Change
Belapart S.A.	Brazilian	RJ	01.608.571/0001-76	2,472,232	52.363	0	0	2,472,232	43.4659%	No	Yes	12/31/2015
Opportunity Holding FIP	Brazilian	RJ	08.277.553/0001-06	2,249,016	47.6360	2,262,108	100.00	4,511,124	56.5341%	No	No	12/31/2015
Others				6	0.00 %			6	0.00%			
Total				**4,721,254**	**100.00 %**	2,262,108	**100.00**	**6,983,362**	**100.00%**			

Table of Contents

Belapart S.A. **CNPJ: 01.608.571/0001-76**

Shareholder	Nationality	State	CPF/CNPJ	Common Shares		Preferred Shares		Total		Member of the shareholders agreement	Controlling shareholder	Date of Last Change
				Quantity	%	Quantity	%	Quantity	%			
Verônica Valente Dantas	Brazilian	RJ	262.853.205-00	1,298	56.1662	0	0	1,298	56.1662	No	Yes	12/31/2015
Sweet River Fund	Cayman Islands		05.707.521/0001-05	1,011	43.7473	0	0	1,011	43.7473	No	No	12/31/2015
Others				2	0.0865	0	0	2	0.0865			
Total				**2,311**	**100.00**	**0**	**0**	**2,311**	**0.00**			

Table of Contents

15.3 Distribution of Capital

Date of last change	04/25/2016
Number of individual shareholders (units)	137,809
Number of corporate shareholders (units)	1,396
Number of institutional investors (units)	1,310

Outstanding shares

Outstanding shares corresponding to all Issuer shares, except for the shares kept by the controlling entity, by related people, by the managers of the issuer, and by the shares held in treasury

Quantity of common shares (Units)	1,469,393,963	45.673233%
Quantity of preferred shares (Units)	1,945,602,385	95,978283%
Quantity of class A preferred shares (Units)	1,945,602,385	95.978283%
Total	3,414,996,348	65.118049%

Table of Contents

15.4 Shareholders Organizational Chart of the issuer and issuer s economic group, pointing out:

a. All direct and indirect controlling shareholders and, if the issuer so wishes, shareholders holding shares equal to or greater than 5% of a class or type of share.

[Treasury Shares] [Other Shareholders]

1. For further information on Valepar controlling shareholders, see following text.

2. All other shareholders included, except for shares held by Valepar and the treasury.

Table of Contents

A Valepar S.A. is a holding company that directly controls Vale holding 33.12% of the Company s share capital, on December 31, 2015. Valepar is controlled by (i) Litel Participações S.A., holding company (52.99%); (ii) Litela Participações S.A. (5.08%); (iii) Bradespar S.A., holding company (17.44%); (iv) Mitsui & Co., Ltd, a trading company (15.00%); (v) BNDES Participações S.A., holding company (9.46%); and, (vi) Electron S.A., holding company (0.02%).

Litel Participações S.A. is a holding company controlled by BB Carteira Ativa (78.40%), and investment fund administered by BB Gestão de Recursos Distribuidora de Títulos e Valores Mobiliários S.A., whose shares are 100% owned by Previ Caixa de Previdência dos Funcionários do Banco do Brasil (Previ). Previ is a closed private pension entity and its participants are employees of Banco do Brasil and Previ. This Fund is administered by BB Gestão de Recursos Distribuidora de Títulos e Valores Mobiliários S.A. For information on the Previ s management, see item 15.8 of this Reference Form.

Litela Participações S.A. is a holding company that is 100% controlled by Litel Participações S.A.

Bradespar S.A. is a holding company controlled by (i) Cidade de Deus Cia. Cial. de Participações S.A., a holding company (12.93%) (ii) NCF Participações S.A., a holding company (9.33%); and (III) Fundação Bradesco, a non-profit organization whose goal is to provide basic and vocational education to children, young adults and adults (5.20%). For additional information about the Fundação Bradesco, see the item 15.8 of this Reference Form. Cidade de Deus Cia. Cial. de Participações S.A. is controlled by Nova Cidade de Deus Participações S.A., a holding company, Fundação Bradesco (33.31%) and Lina Maria Aguiar (8.54%) and Lia Maria Aguiar (6.72%). NCF Participações S.A. is controlled by the Fundação Bradesco (60.41%), Cidade de Deus Companhia Comercial de Participações S.A. (39.51%) and Nova Cidade de Deus Participações S.A. (0.08%). Nova Cidade de Deus Participações S.A. is controlled by Fundação Bradesco (73.93%) and by the BBD Participações S.A. (26.07%). BBD Participações S.A. s share capital is scattered among multiple shareholders, the largest of which is NCD Participações Ltda., with a total share capital of 22.92%.

Mitsui & Co., Ltd is a trading company based in Japan, whose share capital is also highly scattered. For information on Mitsui s major shareholders, see item 15.8 of this Reference Form.

BNDES Participações S.A. is a holding company that is 100% owned by Banco Nacional de Desenvolvimento Econômico e Social - BNDES (BNDES), which holds (i) 5.20% direct participation in the share capital of the Company and (ii) indirect participation in the Company s share capital, as Valepar s shareholder, as previously indicated. BNDES is a state-owned company under private law, whose shares are 100% owned by the Union.

Electron S.A. is a holding company controlled by Opportunity Anafi Participações S.A. (99.99%). Opportunity Anafi Participações S.A. is a holding company controlled by Belapart (52.36%) and it owns shares from Opportunity Holding FIP (47.63%). Belapart S.A. is a holding company controlled by Ms. Veronica Valente Dantas, who owns 56.16% of its total share capital. Opportunity Holding IFP is an equity investment fund managed by Opportunity Private Equity Gestora de Recursos Ltda. For information about Opportunity Holding IFP, see item 15.8 of this Reference Form.

b. company s main subsidiaries and affiliates:

On April 30, 2016, Vale controlled or owned shares in the following companies (for a detailed description of the Company s subsidiaries and affiliates that perform activities relevant to Vale s business, please refer to Item 9 of this Reference Form):

Aceros Del Orinoco S.A
Aços Laminados do Pará S.A.
ACWA Power Moatize Limited
ACWA Power Moatize Termoeléctrica S.A.
Aliança Geração de Energia S.A
Aliança Norte Energia Participações S.A
Anyang Yu Vale Yongtong Pellet Co., Ltd.
Associação de Terminais Portuários Privados - ATP
Associação Instituto Tecnologico Vale
Associação Itakyra

Table of Contents

Associação Memorial Minas Gerais Vale
Associação Museu Vale AMV
Associação Nacional dos Transportadores Ferroviários
Associação Vale para Desenvolvimento Sustentável FUNDO VALE
Australian Coal Inter Holding (NL) I B.V
Balderton Trading Corporate
Baovale Mineração S.A.
Beijing Iron Ore Trading Center Corporation
Belcoal Pty Ltd
Belvedere Australia (BP) PTY Ltd
Belvedere Coal Management Pty Ltd (ACN 112 868 461)
Belvedere JV (Unincorporate)
Biopalma da Amazônia S.A - Reflorestamento, Indústria e Comércio
Bowen Central Coal JV (Unincorporate)
Bowen Central Coal Pty Ltd. - (ACN107 198 676)
Bowen Central Coal Sales Pty Ltd. - (ACN 107 201 230)
Broadlea Coal Management Pty Ltd. - (ACN 104 885 994)
Broadlea JV (Unincorporate)
Caemi Holdings GmbH
California Steel Industries, Inc.
Camberwell Coal Pty Ltd. - (ACN 003 825 018)
Carborough Downs Coal Management Pty Ltd (ACN 108803461)
Carborough Downs Coal Sales Pty Ltd - (ACN 108 803 470)
Carborough Downs JV (Unincorporate)
Central Eólica Garrote Ltda
Central Eólica Santo Inácio IV Ltda.
Central Eólica São Raimundo Ltda.
Central Santo Inácio III Ltda.
CMM Overseas S.A.
Companhia Coreano-Brasileira de Pelotização KOBRASCO
Companhia Ferro-Ligas do Amapá S.A. CFA
Companhia Hispano-Brasileira de Pelotização HISPANOBRAS
Companhia Italo-Brasileira de Pelotização ITABRASCO
Companhia Nipo-Brasileira de Pelotização NIBRASCO
Companhia Paulista de Ferro-Ligas CPFL
Companhia Portuaria Baia de Sepetiba CPBS
Companhia Siderúrgica Ubu
Companhia Usina Tecpar
Compañia Minera Miski Mayo S.Ac.
Consórcio AHE Porto Estrela
Consórcio BM-ES-27
Consórcio BM-PAMA-10
Consórcio BM-PAMA-11
Consórcio BM-PAMA-12
Consórcio Candonga

Table of Contents

Consórcio Capim Branco Energia
Consórcio da Usina Hidrelétrica de Igarapava
Consórcio de Rebocadores da Baia de São Marcos
Consórcio de Rebocadores da Barra dos Coqueiros
Consórcio Estreito Energia - CESTE
Consórcio Gesai - Geração Santa Isabel
Consórcio Machadinho
Consórcio Railnet
Consórcio SF-T-81
Copperbelt (B) Inc.
Corredor do Desenvolvimento do Norte S.A. CDN
Corredor Logistico Integrado de Nacala, S.A.
CPP Participações S.A.
CSI Tubular Products Inc
CSP - Companhia Siderúrgica do Pecem
Cubatão Fertilizer B.V
Cubatão Nitrogenados S.A.
Docepar S.A.
Eagle Downs Coal Management PTY Ltd
Eastern Star Resources Pty Ltd
Ellensfield Coal Management Pty Ltd. - (ACN 123 542 754)
Empreendimentos Brasileiros de Mineração S.A. EBM
Exide Group Incorporated
Ferrovia Centro-Atlântica S.A.
Ferrovia Norte Sul S.A
Ferteco Europa S.à.r.l
Florestas Rio Doce S.A
Fortlee Investments Limited
Fundação Caemi de Previdência Social
Fundação Estação do Conhecimento Moçambique
Fundação Jussor
Fundação Vale
Fundação Vale Colombia
Fundação Zoobotânica de Carajás
Glennies Creek Coal Management Pty Ltd. - (ACN 097 768 093)
Glennies Creek JV (Unincorporate)
Globalore PTE. LTD.
Henan Longyu Energy Resources Co. Ltd.
Hunter Valley Coal Chain Coordinator Limited
IFC - Indústria de Fosfatados Catarinense Ltda
Instituto Ambiental Vale
Integra Coal JV (Unincorporate)
Integra Coal Operations Pty Ltd. - (ACN 118 030 998)
Integra Coal Sales Pty Ltd. - (ACN 080 537 033)
Integrated Logistics Company Pty Ltd

Table of Contents

Internacional Iron Company. Inc
Isaac Plains Coal Sales Pty Ltd. - (ACN 114 276 701)
Kaolin Overseas Ltd.
Kaserge Serviços Gerais Ltda.
Kasonta - Lupoto Mines s.p.r.l
Kasonta (B) Inc.
Katanga (B) Inc.
Konnoco (B) Inc.
Korea Nickel Corporation
Lubambe Copper Mine Ltd.
Lukali Holdings (B) Inc.
Maitland Main Collieries Pty Ltd. - (ACN 000 021 652)
MBR Overseas Ltd.
Minas da Serra Geral S.A.
Mineração Corumbaense Reunida S.A
Mineração Dobrados S.A. Indústria e Comércio
Mineração Guanhães Ltda.
Mineração Guariba Ltda
Mineração Manati Ltda.
Mineração Mato Grosso S.A.
Mineração Ocirema Indústria e Comércio Ltda.
Mineração Paragominas S.A.
Mineração Rio do Norte S.A.
Minerações BR Holding GmbH
Minerações Brasileiras Reunidas S.A.
Moatize Coal Investment (PTY) LTD
Monticello Insurance Ltd.
MRS Logística S.A
MS Empreendimentos e Participações Ltda.
MSE - Serviços de Operação, Manutenção e Montagem Ltda.
MVM Resources International B.V.
Nacala Corridor (DIFC) Limited
Nacala Corridor Holding Netherlands B.V.
Nebo Central Coal Pty Ltd - (ACN 079 942 377)
Norte Energia S.A.
Pangea (Emirates) Limited
Pineland Timber Company Ltd
Ponta Ubu Agropecuaria Ltda
Potássio Rio Colorado S.A.
Prairie Potash Mines Limited
PT Sumbawa Timur Mining
PT Vale Eksplorasi Indonesia
PT Vale Indonesia Tbk
Qld Coal Holdings Pty Ltd - (ACN 081 724 129)
Railvest Investments Inc.

Table of Contents

Retiro Novo Reflorestamento Ltda.
Rio Doce Amsterdam B.V.
Rio Doce Australia Pty Ltd
Rio Doce International S.A.
Salobo Metais S.A.
Samarco Mineração S.A.
SDCN - Sociedade de Desenvolvimento do Corredor de Nacala S.A.R.L.
Seamar Shipping Corporation
SL Serviços Logísticos Ltda
Sociedade de Desenv. de Estudos e Implantação do Corredor de Nacala, Limitada SDEICN
Société d Exploration Minière Vior Inc.
Société Industrielle et Commerciale Brasilo-Luxembourgeoise
SRV Corporate S.A.
Startec Iron LLC
Tao Sustainable Power Solutions (UK) Ltd
TEAL (Zambia) Ltd
TEAL Bazaruto (B) Incorporated
TEAL Etolie (B) Incorporated
TEAL Holdings (B) Incorporated
TEAL Lubumbashi (B) Incorporated
TEAL Management Corporation
Teal Metals (DRC) s.p.r.l
Teal Minerals (Barbados) Incorporated
Teal Minerals (Barbados) Incorporated (Switzerland Branch)
Teal Mining (DRC) s.p.r.l
Teal Mining Moçambique Limitada
Tecnored Desenvolvimentos Tecnológicos S.A.
Tecnored Tecnologia de Auto-Redução S.A.
The Central East African Railway Company Limited
ThyssenKrupp Companhia Siderúrgica do Atlântico
ThyssenKrupp Slab International B.V
Tiebaghi Nickel S.A.S (Branch)
Tiebaghi Nickel S.A.S.
Transbarge Navegacion S.A.
Transporte Ferroviário Concesionária S.A.
Transporte Ferroviário Inversora Argentina S.A.
Troy Resources Limited
TUF Empreendimentos e Participações S.A.
Turbo Power Systems Inc
Turbo Power Systems Limited
Ultrafértil S.A
Vale Africa Investments (Proprietary) Limited
Vale Americas Incorporated
Vale Ásia Kabushiki Kaisha
Vale Australia (CQ) Pty Ltd - (ACN 103 902 389)

Table of Contents

Vale Australia (EA) Pty Ltd - (ACN 081 724 101)
Vale Australia (GC) Pty Ltd - (ACN 097 238 349)
Vale Australia (IP) Pty Ltd - (ACN 114 276 694)
Vale Australia Ellensfield Pty Ltd - (ACN 123 542 487)
Vale Australia Holdings Pty Ltd (ACN 075 176 386)
Vale Australia Pty Ltd (ACN 062 536 270)
Vale Base Metals Asia Pacific Pte. Ltd
Vale Base Metals Americas, Inc.
Vale Belvedere (BC) Pty Ltd.
Vale Belvedere (SEQ) Pty Ltd
Vale Belvedere Pty Ltd (ACN 128 403 645)
Vale Canada Limited
Vale China Holdings (Barbados) Ltd.
Vale Coal Exploration Pty Ltd - (ACN 108 568 725)
Vale Colombia SAS en Liquidación
Vale Comércio Internacional SE
Vale Cubatão Fertilizantes Ltda
Vale Emirates Limited.
Vale Energia S.A
Vale Europa SE
Vale Europe Limited
Vale Europe Pension Trustees Ltd.
Vale Evate Moçambique, Limitada
Vale Exploracion Argentina S.A.
Vale Exploraciones Chile Limitada
Vale Exploraciones Mexico S.A. de C.V.
Vale Exploration Peru S.A.C
Vale Exploration Philippines Inc
Vale Exploration Pty Ltd (ACN 127 080 219)
Vale Explorations USA, Inc.
Vale Fertilizantes S.A
Vale Fertilizer International Holding B.V
Vale Fertilizer Netherlands B.V
Vale Holdings & Services AG
Vale Inco Europe Holdings
Vale Inco Management Advisory Services (Shangai) Co., Ltd.
Vale India Private Limited
Vale International Holdings GmbH
Vale International Korea (Representative Office)
Vale International Oman (Representative Office)
Vale International S.A
Vale International S.A - Singapore Branch
Vale International S.A - DIFC(Branch)
Vale Investments Ltd.
Vale Japan Ltd.

Table of Contents

Vale Limited
Vale Logística Africa, Lda
Vale Logística de Argentina S.A.
Vale Logística de Uruguay S.A.
Vale Logistics Limited
Vale Malaysia Minerals Sdn. Bhd.
Vale Malaysia Sdn. Bhd.
Vale Manganês S.A
Vale Mauritius Limited
Vale Metais Basicos S.A.
Vale Metals (Shanghai) Co.,Ltd
Vale Minerals China Co. Ltd
Vale Moçambique S.A
Vale Newfoundland & Labrador Ltd.
Vale Nickel (Dalian) Co. Ltd
Vale Nouvelle-Calédonie S.A.S Branch
Vale Nouvelle-Calédonie S.A.S.
Vale Oil & Gas Peru S.A.C
Vale Óleo e Gás S.A.
Vale Oman Distribution Center LLC
Vale Oman Pelletizing Company LLC
Vale Overseas Ltd.
Vale Pecém S.A
Vale Potash Canada Limited
Vale Projectos e Desenvolvimento Moçambique, Limitada
Vale Shipping Company Pte. Ltd
Vale Shipping Enterprise Pte. Ltd
Vale Shipping Holding Pte. Ltd
Vale Shipping Singapore Pte. Ltd
Vale Slabs S.A
Vale Soluções em Energia S.A
Vale South Africa (Proprietary) Limited
Vale Switzerland S.A
Vale Taiwan Limited
Vale Technology Development (Canada) Limited
Vale Trading (Shanghai) Co., Ltd
Vale Zambia Limited
ValeServe Malaysia Sdn. Bhd.
Valesul Alumínio S.A.
VLI Multimodal S.A.
VLI Operação Ferroviária Independente S.A.
VLI Operações Portuárias S.A
VLI Participações S.A
VLI S.A
VLI Soluções S.A.

Table of Contents

Wiggins Island Coal Export Terminal Pty Ltd
Zhuhai YPM Pellet Co. Ltd

c. Company s stake in the group s corporations

On April 30, 2016, Vale did not have stake in other companies that were member of the group and that were not one of its subsidiaries or affiliates.

d. Participation of group companies in the Company

On April 30, 2016, no companies that were part of the group that were not directly or indirectly controlled by Vale directly or indirectly owned Company shares.

Table of Contents

e. Companies under joint control

On April 30, 2016, no companies were under the joint control of Valepar and its controlling companies, besides Vale and its subsidiaries.

15.5 Shareholders Agreements filed at the headquarters of the Issuer or the controlling entity:

Vale does not have a shareholders agreement. However, the controlling shareholders of Valepar S.A. signed a Private Instrument of Agreement for Valepar S.A. shareholders (Shareholders Agreement).

a) Parties

Litel Participações S.A., Litela Participações S.A., Bradespar S.A., Mitsui & Co. Ltd., BNDES Participações S.A. and Eletron S.A. (jointly, Signatories)

b) Date of Signing

April 24, 1997.

c) Term

20 years from May 1997, extendable for equal periods of 10 years.

d) Description of clauses relative to the exercise of the right to vote and controlling votes.

The Shareholders Agreement stipulates that the Signatories shall be obliged to orientate their representatives in the General Meetings and the meetings of Vale s Board of Directors to vote as per agreed in the Prior Meeting of Valepar.

With the exception of permitted quorums mentioned below, items in the Prior Meetings will be decided by a simple majority of the votes of the Signatories present.

In accordance with the Shareholders Agreement, it is necessary to have the support of at least 75% of the holders of the relevant common shares for the adoption of the following items:

1. amendment of Vale s bylaws, except for a legal requirement;

2. increase of Vale s share capital by share subscription, creation of a new class of shares, change in the characteristics of the existing shares or any reduction of Vale s share capital;

3. issuance of debentures of Vale, whether or not convertible into shares of Vale, call options or any other security of Vale;

4. determination of issuance price for any new shares of share capital or other security of Vale;

5. amalgamation, spin-off, or merger to which Vale is a party, as well as any change to Vale s corporate form;

6. dissolution, receivership, bankruptcy or any other voluntary act for financial reorganization or any suspension thereof;

7. the election and replacement of Vale s Board of Directors and of Executive Officers of Vale;

8. the election and replacement of the Chairman of the Board of Vale;

Table of Contents

9. the disposal or acquisition by Vale of an equity interest in any company, as well as the acquisition of any shares of share capital of Vale for maintenance in treasury;

10. the participation by Vale in a group of companies or in a consortium of any kind;

11. the execution by Vale of agreements relating to distribution, investment, sales, exportation, technology transfer, trademark license, patent exploration, license to use, and leases in which Vale is a part;

12. the approval and amendment of Vale s business plan;

13. the determination of the compensation of the executive officers and directors of Vale, as well as the duties of the Board of Directors and the Board of Executive Officers;

14. any profit sharing among the members of the Board of Directors or Board of Executive Officers of Vale

15. any change in the corporate purpose of Vale;

16. the distribution or non-distribution of any dividends (including distributions classified as interest on shareholders equity) on any shares of share capital of Vale other than as provided in Vale s bylaws;

17. the appointment and replacement of Vale s independent auditor;

18. the creation of any in rem guarantee, granting of guarantees including rendering of sureties by Vale with respect to obligations of any unrelated party, including any affiliates or subsidiaries;

19. the passing of any resolution on any matter which, pursuant to applicable law, entitles a shareholder to withdrawal rights through reimbursement of his shares;

20. the appointment and replacement by the Board of Directors of any representative of Vale in subsidiaries, companies related to Vale or other companies in which Vale is entitled to appoint directors and officers; and

21. any change in the maximum debt limit and debt to equity threshold, as defined in the shareholders agreement, among others.

Additionally, the Shareholder Agreement establishes that the sale of Vale-issued shares that are owned by Valepar requires Valepar shareholders unanimous approval.

e) Description of clauses relative to the appointment of directors or statutory committees

The management of Vale s business will be carried out by experienced, independent, competent professionals, who have the required qualifications for the positions that they hold.

For the purpose of electing Members of the Board at the respective General Meetings, the Signatories will indicate the total number of Board members, whose designation will fall to Valepar, proportionately to its share in the share capital of Valepar. The CEO of Vale will be selected from names in a triple list put forward by an international executive search company and elected in a meeting of the Board of Directors summoned for this purpose. It will fall to the CEO of Vale to propose to the Board of Executive Officers the names of the other directors.

Each Signatory will, during the period of his or her respective mandate, be able to replace the Board member they indicated. In this situation, all Signatories will vote in favor of the name thus proposed at the General Meeting called for this purpose.

Table of Contents

f) ***Description of clauses relative to the transfer of shares and the preference for acquiring them***

The Shareholder Agreement stipulates that Valepar will have preference as regards the Signatories for the acquisition at any time of Vale s shares, as well as vetoing the direct acquisition of Vale shares by the

Signatories, unless there is authorization from the remaining Signatories, to be granted in a Prior Shareholder Meeting, at which the issue must be approved by a quorum of 75% of the total of the common Valepar shares, related to the shareholder agreement.

In line with the Shareholder Agreement, it is necessary to have the Approval of the Shareholders of 100% of the common shares related to the Agreement in question for the disposal in any form of Vale shares owned by Valepar.

g) ***Description of clauses which restrict or tie voting rights of members of the Board of Directors***

See line d .

Table of Contents

15.6 Relevant Changes in the shareholdings of Members of the Control Group and issuer managers

There were no significant changes in the shareholdings of Members of the Control Group and directors of the Company in the last 3 financial years.

Table of Contents

15.7 Main shareholder events that took place at the issuer s, controlling or affiliated companies.

2013

Increased participation in the Belvedere coal project.

On January 31, 2013, Vale Belvedere Pty Ltd. signed agreements to complete a purchase option exercised in June 2010, which bought additional stake of 24.5% in the Belvedere of Aquila Resources Limited (Aquila) s coal project. The purchase price, A$ 150 million (equivalent to US$156 million, applying the rate 1.04 AUD/USD rate), is equivalent to the market value, using as a basis the date on which the option was execute (June 2010), as determined by an independent appraiser hired by Vale and Aquila at the time. As a result of this transaction, Vale Belvedere Pty Ltd has increased its participation in Belvedere to 100%. Additionally, Vale Belvedere Pty Ltd has agreed to pay A$ 20 million (equivalent to US$ 21 million) to settle disputes and lawsuits involving Belvedere and Aquila.

In total, Vale paid US$ 38 million for 100% of Belvedere. Belvedere is a future growth option and consists of an underground coalmine project located in the southern region of the Bowen Basin, near the town of Moura, in the State of Queensland, Australia. Vale s Board of Directors approved the project. According to preliminary estimates, Belvedere has the potential to achieve a production capacity of 7.0 million metric tons a year, mostly metallurgical coal.

Considering the nature of the above operation, and considering that it does not involve a company that directly or indirectly controls Vale, there is no need to discuss mechanisms to ensure equal of Company shareholders.

Increased participation in Capim Branco I and II hydropower plants

On March 12, 2013, Vale, along with Cemig Capim Branco Energia S.A., acquired or R$ 223,030,470 .52, through the right of first refusal set forth in the contract that established Consórcio Capim Branco, 12.47% stake of Suzano Papel e Celulose S.A. and Suzano Holding S.A. in the capital of Capim Branco I and II hydropower plants. As a result, Vale now holds 60.89% of Capim Branco I and II, and may generate 1,524 gig watt-hours per year of energy until the end of the concession in 2036. The acquisition of additional interest in the Capim Branco I and II hydropower plants adds value to the extent that it produces immediate reduction of energy cost for our operations, and it is a low-risk investment with a clearly superior return to Vale s capital cost.

Considering the nature of the above operation, and considering that it does not involve a company that directly or indirectly controls Vale, there is no need to discuss mechanisms to ensure equal of Company shareholders.

Return and assignment exploration blocks

On June 28, 2013, Vale and other participants of the Consortium SF-T-80 received authorization by the National Petroleum Agency to return the San Francisco basin blocks (SF-T-80, 82, 83 and 93).

Additionally, on August 20, 2014 and on November 07, 2014, respectively, Vale completed the burdensome transfer to GDF (Gaz de France) of its participation in the BT-PN-3 and BT-PN-2, blocks located in the Parnaíba basin (BT-PN-2 and BT-Np3), for about R$24 million, after ANP approved the transfer. The end of sales of both locks blocks took place in 2014.

Considering the nature of the above operation, and considering that it does not involve a company that directly or indirectly controls Vale, there is no need to discuss mechanisms to ensure equal of Company shareholders.

Sale of VLI Shares

On September 18, 2013, Vale entered into agreements for the sale of 20% of the total capital of VLI to Mitsui & Co. (Mitsui) for R$ 1.5 billion and 15.9% of VLI s total capital for R$1.2 billion to Fundo de Investimento do Fundo de Garantia do Tempo de Serviço FGTS (FI-FGTS), whose assets are managed by Caixa Econômica Federal. This transaction was completed on April 14, 2014. The total amount obtained through the transaction with FI-FGTS and R$ 800 million from the transaction with Mitsui were made up of a capital investment in VLI,

Table of Contents

which issued new common shares to Mitsui and to FI-FGTS. The amounts invested in VLI are intended to finance part of the VLI s investment plan. The remaining amount from the Mitsui transaction, R$ 709 million, was paid directly to Vale in return for the sale of certain number of shares issued by VLI previously held by Vale for Mitsui.

Additionally, on December 23, 2013, Vale has entered into an agreement with a fund managed by Brookfield Asset Management (Brookfield) for the sale of 26.5% stake in the VLI s total capital, for $ 2 billion. This transaction was completed August 19, 2014, after which Vale came to hold 37.6% of VLI s total capital. Vale, Mitsui, FI-FGTS and Brookfield are signatories of a shareholder agreement whose object is their participation in VLI s capital. For more information, see item 10.3 of this Reference Form.

The mechanism adopted to ensure equal treatment among all shareholders consists of submitting all transactions with related parties related for approval by Vale s Board of Directors of Vale. The officers appointed by the controlling shareholders involved did not receive material or participated in the process of analysis and discussion of the respective transaction that informed Vale s decision-making process.

Sale of all Norsk Hydro shares

On November 14, 2013, Vale announced the sale of all of its 22% stake in Norsk Hydro ASA (Hydro), owned by its subsidiary Vale Austria Holdings GmbH, currently named Vale International Holdings GmbH (Vale Austria), for NOK 25.00 per share, resulting in the amount of NOK 11.196 billion, equivalent to US$ 1.822 billion (equivalent to R$ 4.243 billion). Vale Austria owned these shares since 2011, when it restructured the portfolio of aluminum assets. Upon completion of this transaction, the Vale Austria no longer holds Hydro shares.

During this operation, on November 09, 2014, Vale Austria sold to Norsk Hydro ASA (Hydro) shares issued by Mineração Paragominas S.A. representing 20% of its total capital, as a result of a put option. The remaining 20% stake owned by Vale Austria in Mineração Paragominas S.A. s share capital is also subject to a put option by Vale, which may be executed starting on February 28, 2016.

Considering the nature of the above operation, and considering that it does not involve a company that directly or indirectly controls Vale, there is no need to discuss mechanisms to ensure equal of Company shareholders.

Sale of Tres Valles shares

On December 12, 2013, Vale completed the sale of Sociedad Contractual Minera Tres Valles (Tres Valles) for US$ 25 million (equivalent to R$ 54 million) to Inversiones Porto San Giorgio S.A. (ISG), a company controlled by the Chilean group Vecchiola S.A.

Tres Valles is a copper cathode manufacturer in the region of Coquimbo in Chile. The transaction included Vale s full 90% stake in Tres Valles capital, in addition to certain mining rights held by Vale in the region of Coquimbo. Tres Valles has underground and open-pit mines and has a

production capacity of up to 18,500 metric tons of copper cathode per year.

Considering the nature of the above operation, and considering that it does not involve a company that directly or indirectly controls Vale, there is no need to discuss mechanisms to ensure equal of Company shareholders.

Sale of assets in energy generation

On December 19, 2013, Vale entered into agreements with CEMIG Geração e Transmissão S.A. (CEMIG GT) (i) for the sale of 49% of its 9% stake in the capital of Norte Energia S.A. (Norte Energia), the company in charge of the construction, operation and exploitation of the Belo Monte hydroelectric plant of (Belo Monte), for R$ 310 million; and (ii) the creation of a joint venture consisting of power generation assets.

For this purpose, two distinct vehicles were created to house projects and power generation assets:

(i) Aliança Norte Energia Participações S.A. (Aliança Norte), consisting of Vale and CEMIG GT, respectively with 51% and 49% in the total capital. The establishment of this company happened in two stages: initially, Vale transferred its 9 percent stake in Norte Energia to its subsidiary Aliança Norte and, next, CEMIG GT acquired 49% of shares

Table of Contents

from this company for the amount of approximately R$ 310 million. This portion of the transaction was completed on March 31, 2015. Vale reduced its stake in Norte Energia s total capital to 4.59%, maintaining the right to purchase 9% of the energy produced by the power plant, pursuant to the long term energy purchase agreement signed in 2012; and

(ii) Aliança Geração de Energia S.A. (Aliança Geração), consisting Vale and CEMIG GT, respectively with 55% and 45% in total capital, contingent on their level of participation in the following power generation assets: Porto Estrela, Igarapava, Funil, Capim Branco I and II, Aimorés and part of Cadonga. These power plants have attributed installed capacity of 1,158 MW and an average of 652 MW of guaranteed energy. Supply of electric power supply to Vale operations shall be secured by a long-term contract with Aliança Geração, to ensure that the same amount of electricity continues to be supplied to the Vale s operations immediately prior to the conclusion of said transaction. This part of the deal was completed on February 27, 2015, but it did not entail any disbursement or inflow of funds for the aforementioned assets.

Considering the nature of the above operation, and considering that it does not involve a company that directly or indirectly controls Vale, there is no need to discuss mechanisms to ensure equal of Company shareholders.

Sale of purified phosphoric acid asset

On December 20, 2013, Vale signed with Israel Chemicals Ltd. (ICL) and agreement for the sale its full participation of 44.25%, in the capital of Fosbrasil, a manufacturer of purified phosphoric acid located in Cajati, São Paulo State, for US$ 52 million. This transaction was completed on December 18, 2014, after usual preceding conditions and approvals were met, including those by the Administrative Council for Economic Defense (CADE). Vale no longer has shares in Fosbrasil.

Considering the nature of the above operation, and considering that it does not involve a company that directly or indirectly controls Vale, there is no need to discuss mechanisms to ensure equal of Company shareholders.

Sale of Log-in shares

On December 26, 2013, pursuant to CVM Instruction 168, from December 23, 1991, as amended, Vale held an auction to sell 28,737,367 its common shares issued by Log-in Logística Intermodal S.A. (Log-in), a company listed in the BM & FBOVESPA (*ticker symbol*: LOGN3), corresponding to all of Vale s common shares issued by Log-in, for R$ 8,11 per share, totaling R$ 233 million. The completion of this transaction occurred on January 02, 2014.

Considering the nature of the above operation, and considering that it does not involve a company that directly or indirectly controls Vale, there is no need to discuss mechanisms to ensure equal of Company shareholders.

2014

Sale of stake in Vale Mozambique and Nacala Logistic Corridor

On December 9, 2014, Vale entered into an investment agreement with Mitsui, whereby Mitsui will hold, subject to the fulfillment of precedent conditions, 15% of Vale s 95% stake in Vale Mozambique (concessionaire of the Moatize mine) and 50% of Vale s participation in the Nacala Logistic Corridor (Nacala Corridor). The deal involves capital increase and partial transfer of debt incurred by Vale Mozambique and by the companies from Nacala Corridor with Vale. Vale now indirectly holds 81% of the Moatize mine and approximately 35% of the Nacala Corridor, sharing control with Mitsui.

The value assigned to Mitsui s 15% participation in Vale Mozambique is US$ 450 million. Additionally, Mitsui may pay another US$ 30 million due to an earn-out clause. On the other hand, there is also a claw-back cause worth up to US$ 120 million. Both the earn-out and the claw-back amounts are contingent on massive recovery goals at the processing plant and production targets agreed upon by Vale and Mitsui. As a result of these clauses, final value attributed to the 15% shares in Vale Mozambique may vary between US$ 330 million and

Table of Contents

US$ 480 million. Additionally, Mitsui shall be responsible for *pro-rata* financing, its participation of 15%, the share that in the investment required to complete the expansion of the Moatize mine, whose value is estimated at US$ 188 million.

On completion of the deal, Mitsui shall contribute US$ 313 million to finance the Nacala Corridor and, thus, it shall hold 50% of some the financial instruments, sharing control of the Nacala Corridor with Vale. Until completion of the transaction and Mitsui s investment, Vale shall continue to finance the Nacala Corridor with its own bridge loans.

The completion of the transaction is subject to certain precedent conditions, including governmental approvals and applicable jurisdictional regulations, and it is expected to be finalized in 2016.

The transaction supports Vale s strategy to operate world-class assets, improve balance and reduce future needs for investment while reducing exposure to project risk.

The mechanism adopted to ensure equal treatment among all shareholders consists of submitting all transactions with related parties related for approval by Vale s Board of Directors of Vale. The officers appointed by the controlling shareholders involved did not receive material or participated in the process of analysis and discussion of the respective transaction that informed Vale s decision-making process, and in compliance with the provisions set forth in the Related Parties Transaction Policy adopted by the company.

Sale of Forest Valley shares

On June 04, 2014, Vale announced that it has entered into an agreement with a subsidiary of Suzano Papel e Celulose S.A. (Subsidiary Suzano), producer of eucalyptus pulp, for the sale of all of its shares in Vale Florestar Fundo de Investimento (FIP Vale Florestar), for R$205 million. All usual precedent conditions and approvals, including those by the Administrative Council for Economic Defense - CADE were fulfilled, and, thus, the transaction was finalized on August 08, 2014.

BNDESPar, Petros and FUNCEF, the other FIP Vale Florestar shareholders also sold their respective shares to Subsidiária Suzano, which now holds 100% of FIP Vale Florestar.

Considering the nature of the above operation, and considering that it does not involve, as a purchasing party, a company that directly or indirectly controls Vale, there is no need to discuss mechanisms to ensure equal of Company shareholders.

Sale of assets from maritime transport and cooperation agreements

Vale and China Cosco Bulk Shipping (Group) co. Ltd.

On September 12, 2014, Vale and China Cosco Bulk Shipping (Group) co. Ltd. (Cosco) signed and strategic cooperation agreement for the maritime transport of iron ore. Under the agreement, four VLOC (Very Large Ore Carriers) ships, with a capacity of 400 thousand tons, owned and operated by Vale, would be sold to Cosco, and Cosco would be responsible for the construction of 10 more ships to be used for transport of iron ore. On May 19, 2015, Vale and China Ore Shipping Pte. Ltd., a subsidiary of Cosco, entered into a charter agreement for the transport of 6.4 million tons of ore per year. On June 2, 2015, the sale was completed, along with the delivery of the ships. The transaction totaled US$ $445 million.

Vale International S.A. and Hong Kong Ming Wah Shipping Co. Ltd.

On September 26, 2014, Vale International S.A. (Vale International) and Hong Kong Ming Wah Shipping Co. Ltd (a subsidiary of China Merchants Energy Shipping Co. Ltd. entered into a strategic cooperation agreement for the transport of iron ore (Cooperation Agreement). The Cooperation Agreement foresaw that China Merchants Energy Shipping Co. Ltd, would build 10 ships to be used for the carriage of iron ore. On May 19, 2015, Vale International and China Merchants Energy Shipping Co., Ltd., signed an amendment to the Cooperation Agreement, by means of which Vale International would sell four VLOC ships to China Merchants Energy Shipping Co. Ltd.

On September 25, 2015, Valley International S.A. and Hong Kong Ming Wah Shipping Co. Ltd signed a Contract of Carriage, for a period of 20 years, expandable for another five year at Vale International s discretion. The contract provided for the sale of four VLOC ships and the transport of 6.4 million tons, for CMES. This sale was completed on September 30, 2015. The transaction totaled US$ $448 million.

Table of Contents

Considering the nature of the above operations, and considering that they do not involve companies that directly or indirectly control Vale, there is no need to discuss mechanisms to ensure equal of Company shareholders.

Vale International and ICBC Financial Leasing and Millenia Resources

On December 15, 2014, Vale International SA and ICBC Financial Leasing and Millenia Resources signed a cooperation agreement for the maritime transportation of iron ore. Initially, under the agreement, two VLOC ships with a capacity of 400,000 tons, owned and operated by Vale, would be sold to a consortium of investors led by the ICBC Financial Leasing and Millenia.

On December 8, 2015, Vale Shipping Singapore, a subsidiary of Vale International, and VLOC Maritime HK., Ltd., a subsidiary of ICBC Financial Leasing and of Millenia Resources, concluded the purchase and sale transaction for four VLOC ships, which totaled US 423 million. The amount was received by Vale, concurrently with the delivery of the ships to the new owners on December 8, 2015.

Considering the nature of the above operation, and considering that it does not involve a company that directly or indirectly controls Vale, there is no need to discuss mechanisms to ensure equal of Company shareholders.

2015

Review of the Simandou iron ore project in the Republic of Guinea

Vale acquired together with BSG Resources Ltd. (BSGR) on April 30, 2010, 51% stake in BSG Resources (Guinea) Ltd., known today as VBG Vale BSGR Limited (VBG), which, at the time, held iron ore concession in South Simandou (Zogota) and exploration licenses in North Simandou (blocks 1 and 2), in the Republic of Guinea. On March 13, 2015, Vale transferred its share participation in VBG back to BSGR, due to the fact that the Government of Guinea revoked the mining rights for the Simandou and Zogota concession areas held by VBG. For more information, see item 7.5 (a) of this Reference Form.

Considering the nature of the above operation, and considering that it does not involve a company that directly or indirectly controls Vale, there is no need to discuss mechanisms to ensure equal of Company shareholders.

Sale of MBR shares

On July 29, 2015, Vale entered into a Purchase, Sale and Other Agreements Contract with Fundo de Investimento em Participações Multisetorial Plus II (FIP Plus II), whose shares are currently held by Banco Bradesco BBI S.A., by means of which it has promised to sell class A preferred shares, representing 36.4% of Minerações Brasileiras Reunidas S.A. MBR (MBR) for US$ 4 billion, subject to the applicable usual suspensive conditions, including the prior approval of the operation by CADE. After the operation is finalized, Vale shall, directly and indirectly, own 61.9% of the total capital, and 98.3% of the MBR s common capital. Vale shall also have call for MBR shares held by the FIP Plus II.

On September 1, 2015, Vale and FIP Plus II concluded the sale of 36.4% of Minerações Brasileiras Reunidas S.A. MBR s share capital, when the required precedent conditions for the liquidation of the operation were met. The transaction is listed in the announcement made on July 30, 2015, and the amount received by the Vale for the sale of the class A preferred shares was R$ 4 billion, paid in a single installment. Vale has the option to repurchase the shares issued MBR that are currently held by BBI, successor to FIP Plus II.

The mechanism adopted to ensure equal treatment among all shareholders consists of submitting all deals with related parties related for approval by Vale s Board of Directors of Vale, after the Governance and Sustainability Committee s favorable opinion, if the member appointed by the controlling shareholders involved did not receive material or participated in the process of analysis and discussion of the respective transaction that informed Vale s decision-making process, and in compliance with the provisions set forth in the Related Parties Transaction Policy adopted by the company.

Table of Contents

Return and assignment exploration blocks

On July 27, 2015, a petition was filed at the ANP requesting approval for the return of exploration rights of blocks relative to concession contract BM-ES-27.

On September 24, 2015, Supreme Decree No. 030-2015-approved the transfer of exploration rights of the Contract of Block XXI, in Peru, from VALE OLEO & GAS PERU S.A.C to GOLD OIL PERU S.A.C.

On October 28, 2015, it was approved the dissolution of the Board of Directors, the replacement of Chief Executive Officer and Officer, and the incorporation of VALE ÓLEO E GAS to the group s company.

Considering the nature of the above operation, and considering that it does not involve a company that directly or indirectly controls Vale, there is no need to discuss mechanisms to ensure equal of Company shareholders.

Sale of Isaac Plains mine

In November 2015, Vale completed the sale of its 50% stake in the joint venture Isaac Plains and all assets related to Stanmore Coal Limited (Stanmore). Under this agreement, Vale will pay A$21.6 million in 12 monthly installments to Stanmore, who will assume the responsibilities of the Vale under the joint venture agreement. Stanmore agreed to pay royalties to Vale in the amount of $2.0 value per ton of coal produced and sold in the Isaac Plains coal mine over a period of 10 years, subject to certain minimum prices, up to an added value of A$ 21.6 million.

Considering the nature of the above operation, and considering that it does not involve a company that directly or indirectly controls Vale, there is no need to discuss mechanisms to ensure equal of Company shareholders.

Sale of Integra coal operations

In December 2015, Vale completed the sale of its 68.4% stake in Joint Venture de Carvão da Integra (ICJV) and all assets related to Glencore Plc (Glencore). In return, Glencore agreed to pay royalties to Vale in the amount of A$ 1.50 per ton of the coal produced and sold by ICJV, based on mineral rights currently held by ICJV, proportional Vale s participation in ICJV prior to the sale and limited to an annual volume of two million metric tons for ten years. As part of the deal, Glencore has taken some, but not all, ICJV obligations, including certain logistics mandatory purchase contracts.

Considering the nature of the above operation, and considering that it does not involve a company that directly or indirectly controls Vale, there is no need to discuss mechanisms to ensure equal of Company shareholders.

15.8 Other relevant information

Additional Clarifications to item 15.1

The following is additional information related to the shareholders mentioned in item 15.1 of this Reference Form:

(i) Caixa de Previdência dos Funcionários do Banco do Brasil - PREVI (Previ)

In May 2016, Previ management is divided between the Board of Directors, the Executive Board, and the Audit Committee. The Executive Board is composed of six members: a Chairman, a Management Officer, an Investments Officer, a Social Security Officer, an Equity Officer, and a Planning Officer. The Board of Directors is composed of six members and their respective alternates. Three are elected by the shareholders and beneficiaries, and three are appointed by Banco do Brasil.. The Audit Committee consists of four permanent members and their respective alternates, two of which are elected by the shareholders and beneficiaries and two are appointed by Banco do Brasil.

Table of Contents

In May,2016 the Board of Directors was composed of the following board members: Paulo Roberto Lopes Ricci (Chairman), Robson Rocha, Antônio José de Carvalho, Rafael Zanon Guerra de Araújo, Haroldo do Rosário Vieira, and Eduardo César Pasa; and the respective alternates of the first four are Carlos Alberto Araújo Netto, Carlos Eduardo Leal Neri, José Bernardo de Medeiros Neto, and José Ulisses de Oliveira. Haroldo do Rosário Vieira and Eduardo César Pasa did not have alternates at the time. The Executive Board was composed of the following members: Gueitiro Matsuo Genso (Chief Executive Officer), Cecília Mendes Garcez Siqueira (Management Officer), Marcos Moreira de Almeida (Investments Officer), Renato Proença Lopes (Equity Officer), Décio Bottechia Júnior Planning Officer), and Marcel Juviniano Barros (Social Security Officer). The Audit Committee was composed of the following members: Odali Dias Cardoso (Chairman), Williams Francisco da Silva, Aureli Carlos Balestrini, Adriano Meira Ricci; and by their corresponding alternates: Diusa Alves de Almeida, Iris Carvalho Silva, Daniel André Stieler and Carlos Célio de Andrade Santos. The Equity Officer is responsible for monitoring the companies which make up the variable income portfolio and the real estate portfolio, especially as concerns the shareholdings and Previ s share and representation in the administrative and supervisory organs of the companies or undertakings, with a view to adopting any measures necessary to assure best corporate governance practices for companies in which investments have been made.

(ii) Fundação Bradesco

The Fundação Bradesco is a non-profit entity that for the past 59 years has been fostering the development of children and adolescents through their own schools, generally located in areas of education and basic welfare is scarce. Both basic and vocational education is provided to students free of charge, and so is their educational materials, uniform, food, medical and dental aid. Financial resources to support Fundação Bradesco come from the results generated by its financial assets and share participations. The total amount of resources is invested in the development of educational project that are also entirely free.

According to the terms of Fundação Bradesco s bylaws, the Managing Body is in charge of (i) protecting the Foundation s goals; (ii) providing guidelines to its actions; (iii) protect its assets; (iv) elect, dismiss and oversee members of the Board of Directors. The Managing Body consists of (a) Members of Banco Bradesco S.A. s Administrative Board, who are or have been members of its Executive Board, (b) Banco Bradesco S.A. s Chief Executive Officers or Assistance Executive Officers; (c) Banco Bradesco S.A. s Executive Managers and Assistants, Head of Departments, and Officers with at least 10 years of service to Organização Bradesco; (d) Member of Cidade de Deus - Companhia Comercial de Participações Administrative Board and Officers.

(iii) Mitsui & Co. Ltd.

Mitsui & Co. Ltd., direct controlling entity of Valepar S.A., has share control spread among many shareholders. The following table presents information regarding Mitsui & Co. Ltd. on September 30, 2015:

	Common Shares		Preferred Shares		Total Shares	
Shareholder	**Qty**	**%**	**Qty**	**%**	**Qty**	**%**
The Master Trust Bank of Japan, Ltd. (trust account)	1117,226,000	6.52			117,226,000	6.52
	84,391,000	4.69			84,391,000	4.69

Japan Trustee Services Bank, Ltd. (trust account)				
Sumitomo Mitsui Banking Corporation	38,500,000	2.14	38,500,000	2.14
Nippon Life Insurance Company	35,070,000	1.95	35,070,000	1.95
Barclays Securities Japan Limited	25,000,000	1.39	25,000,000	1.39
Mitsui Sumitomo Insurance Company, Limited	24,726,000	1.37	24,726,000	1.37
The Bank of New York Mellon SA/NV	25,563,000	1.42	25,563,000	1.42
State Street Bank and Trust Company	28,680,000	1.59	28,680,000	1.59
State Street Bank West Client-Treaty	24,792,000	1.38	24,792,000	1.38
The Dai-ichi Life Insurance Company, Limited	20,444,00	1.13	20,444,00	1.13
Others	1,371,122,127	76.42	1,371,122,127	76.42
Total	**1,796,514,127**	**100.00**	**1,796,514,127**	**100.00**

Table of Contents

(iv) Opportunity Holding FIP

Opportunity Holding FIP is one of the indirect controlling entities of Vale. Opportunity Holding FIP is an investment fund administered by BNY Mellon Serviços Financeiros DTV S.A. and managed by Opportunity Private Equity Gestora de Recursos Ltda., responsible for the fund investment decisions, and represented by the administrator Leonardo Guimarães Pinto (CPF No. 082.887.307-01)

Additional Clarifications regarding item 15.2

Below are additional clarifications on item 15.2 about the shareholders who hold relevant participation in the company:

(i) *Capital Research Global Investors and Capital Group International Inc.*

1) as reported to the Company, *Capital Research Global Investors* (CRGI) holds 204,367,633 class A preferred shares issued by the Vale. CGRI is an independent investment division of *Capital Research and Management Company* (CRMC)

2) as reported to the Company, *Capital Group International, Inc* (CGII) holds 202,272,464 class A preferred shares issued by Vale. The CGII is an independent investments division of CRMC.

CRCM and CGII belong to the same group and are companies incorporated and operating under the laws of the United States of America, with headquarters at 333 South Hope Street, Los Angeles, California 90071, United States of America, having as legal representative in Brazil J.P. Morgan S.A. distributor of securities registered in the CNPJ/MF under no. 33.851.205/0001-30, and Citibank DTVM S.A., registered in the CNPJ/MF under no. 33.868.597/0001-40.

In addition to the participations highlighted above, which are described in item 15.2, as reported to the Company, Capital World Investors, a company of the same economic group a CGII, manages 5,620,000 class A preferred shares issued by Vale, corresponding to 0.28% of this kind of share. These shares were included in item 15.2 on the Other line.

(ii) *Brazilian Government*

The Brazilian Government holds 12 special class preferred shares (golden shares) of Vale, which are included in the category Others item 15.1/15/2. These shares grant it the power to veto in certain matters involving the Company, such as changes in Company name, location of the Company s head office and its corporate purpose, with regard to mineral exploration. For more information, see item 18.1 of this Reference Form.

Table of Contents

16.1 Description of rules, policies, and practices by the issuer on transactions with related parties, indicating, if any, a formal policy adopted by the issuer and where it can be consulted

Vale is amongst the largest private Brazilian companies, and operates in various segments of the economy, with cash flow and wealth consistent with its size. For this reason, in view of the constant search for better trading conditions for the achievement of its activities and the investment of its resources, the Company often negotiates the terms of the transactions inherent in its businesses, which inevitably leads to agreeing on transactions with related parties whenever its best interests and those of its shareholders are served.

Thus, transactions with related parties are made by the Company in a strictly exchanged based manner, observing usual price and market conditions, and therefore do not generate any undue advantage to their counterparts nor damage to the Company.

As provided in the Bylaws, it is Vale s Board of Directors responsibility to discuss any business between the Company and (i) its shareholders, directly or through interposed companies, (ii) companies that participate, directly or indirectly, in the capital of a controlling shareholder or are Subsidiary by or under common control of entities that participate in the capital of the controlling shareholder, and/or (iii) companies in which the controlling shareholder of the Company is involved. Accordingly, the Board of Directors may delegate responsibilities with limits and procedures that meet the peculiarities and nature of operations, without withholding due information on all the Company s transactions with related parties.

In December 2013, Vale also has a Policy for Transactions with Related Parties (Policy), which establishes guidelines and principles to ensure that the transfer, free of charge or onerous, of funds, services or obligations involving people and/or companies with whom Vale has the possibility of contracting under conditions that are not independent conditions that characterize transactions with third parties (Related Parties and Transactions with Related Parties , respectively), being conducted under market standards, including the best practices in corporate governance, with due transparency, prioritizing Vale s best interests, avoiding abuses and misuses of company assets, as well as preventing the granting of loans in favor of Related Parties, except in favor of subsidiaries and affiliates of Vale.

Note that the Policy prohibit the granting of loans by the Company in favor of related parties, except in favor of subsidiaries or affiliates of Vale.

This Policy may be consulted at the Company website (www.vale.com), in the section Investor Relations (http://www.vale.com/brasil/pt/investors/company/corporate-governance/policies/Paginas/default.aspx).

For more information on the Policy for Transactions with Related Parties, see items 12.2 (d) and 12.3 (c) in this Reference Form.

Any violation against the terms in this Policy will be considered a violation against the Code of Ethics and Conduct and is subject to procedures and penalties set forth therein. Additionally, the infringing party will also be responsible for losses and damages caused to Vale and third parties.

Additionally, Vale has Governance and Sustainability Committee committed to reviewing and proposing improvements to its Code of Ethics and Conduct and to the management system to avoid conflicts of interest, advising on potential conflicts of interest between the Company, its shareholders, and directors, as well as under the Policy, evaluating the selection process and conditions of transactions to be appreciated by the Board of Directors. In addition, as soon as the conflict of interest is identified regarding a specific issue, the shareholder or representative of the shareholder of Vale will have access only to documents or information on the matter as disclosed to the market, under the terms in current laws, and will not be present, including physically, in discussions at the Shareholders Meeting, never failing to comply with legal obligations. The manifestation of conflict of interests, absence and temporary leave should be recorded in the minutes.

Table of Contents

16.2 Except for operations between issuer and companies where the issuer directly or indirectly holds the entirety of the capital stock, the disclosure of information on transactions with related parties that, according to accounting rules, should be disclosed in the individual or consolidated financial statements of the issuer and that have occurred in the last fiscal year or are in force in the current fiscal year:

Name of related party	Banco Bradesco S.A.
Date of transaction	2/5/2015
Amount (R$)	R$44,516,597.24
Current balance (R$)	R$45,653,300.20
Amount of related party	Not applicable
Duration	Due by 5/23/2017
Loan or other type of debt	No
Interest rate	
Relationship with the Issuer	Bradespar S.A., indirect controller of Vale, and Banco Bradesco S.A. are under common control
Purpose of the contract	4 applications on Bank Deposit Certificates acquired by Vale and its subsidiaries. The rate applicable on the Contract is 81.21% CDI.
If issuer is creditor or debtor	Creditor
Guaranties and insurance	None
Conditions of termination or expiration	None
Nature and reason for the transaction/other relevant information	

Name of related party	Banco Bradesco S.A., New York Branch
Date of transaction	4/22/2015
Amount (R$)	R$ 976,200,000.00
Current balance (R$)	R$ 0
Amount of related party	Not applicable
Duration	Due on 4/29/2015
Loan or other type of debt	No
Interest rate	
Relationship with the Issuer	Bradespar S.A., indirect controller of Vale, and Banco Bradesco S.A. are under common control
Purpose of the contract	3 applications on Time Deposit contracted by Vale and its subsidiaries. The rate applicable on the Contract is 0,15% per annum
If issuer is creditor or debtor	Creditor
Guaranties and insurance	None
Conditions of termination or expiration	None
Nature and reason for the transaction/other relevant information	None

Table of Contents

Name of related party	Banco do Brasil S.A.
Date of transaction	3/1/2011
Amount (R$)	R$ 2,101,096,783.38
Current balance (R$)	R$ 1,435,588,343.22
Amount of related party	Not applicable
Duration	Due by 11/20/2019
Loan or other type of debt	No
Interest rate	
Relationship with the Issuer	Banco do Brasil sponsors the private pension fund of bank employees, Previ - Caixa de Previdência dos Funcionários do Banco do Brasil, which, in turn, is the parent company of Litel Participações S.A. (Litel) holding that holds controlling interests in Valepar
Purpose of the contract	40 applications on Bank Deposit Certificates acquired by Vale and its subsidiaries. The rate applicable on the Contract is 100.45% CDI.
If issuer is creditor or debtor	Creditor
Guaranties and insurance	None
Conditions of termination or expiration	None
Nature and reason for the transaction/other relevant information	None

Name of related party	Mineração Brasileiras Reunidas S.A.- MBR
Date of transaction	8/19/2015
Amount (R$)	3,000,000,000.00
Current balance (R$)	3,172,357,443.72
Amount of related party	Not applicable
Duration	8/19/2021
Loan or other type of debt	Yes
Interest rate	101%
Relationship with the Issuer	Subsidiary
Purpose of the contract	4th private issuance of simple debentures, non-convertible into shares, in single series issued by Vale The purpose of issuing funds was to reinforce cash flow and working capital. Debentures fully subscribed by Minerações Brasileiras Reunidas MBR
If issuer is creditor or debtor	Debtor
Guaranties and insurance	None.
Conditions of termination or expiration	For information on obligation termination or extinction conditions under this Issuance, see item 18 in this Reference Form.
Nature and reason for the transaction/other relevant information	Rate 101% CDI

Name of related party	Banco do Brasil S.A.

Table of Contents

Date of transaction	12/20/2013
Amount (R$)	340,000,000.00
Current balance (R$)	341,409,327.02
Amount of related party	Not applicable
Duration	12/20/2023
Loan or other type of debt	Yes
Interest rate	112.6%
Relationship with the Issuer	Banco do Brasil sponsors the private pension fund of bank employees, Previ - Caixa de Previdência dos Funcionários do Banco do Brasil, which, in turn, is the parent company of Litel Participações S.A. (Litel) holding that holds controlling interests in Valepar
Purpose of the contract	Export Credit Note (NCE) used to reinforce working capital, aiming to support production of assets to be exported, as well as supporting and complementing activities essential to exporting
If issuer is creditor or debtor	Debtor
Guaranties and insurance	None.
Conditions of termination or expiration	Conditions for early termination: a) the Company fails to pay Financial Fees or the Principal on the respective due dates; b) the Company files for bankruptcy, judicial or extrajudicial recovery or bankruptcy is filed judicially by third parties and is not solved by the Company within 45 days, from the notice day; c) in case of Company liquidation, extinction or dissolution, or end of activities, for any reason; d) directly or through agents or proxies, if the Company provides Banco do Brasil S.A., within execution of obligations provided for under the Contract, with incomplete or untrue information, including by means of private or public document of any nature, provided that acting with evident guilt, willingness or bad faith; e) in case of contractual non-compliance by the Company, there is early maturity of other financing by the Company with Banco do Brasil S.A. which outstanding amount, severally or jointly, is equal or higher than US$ 50,000,000.00, or equivalent in other currency; f) change to the Company corporate purpose, as set forth in the by-laws current on the Contract date, provided that, as consequence, the Company is no longer engaged in mining activities; g) the Company fails to comply with any judicial final decision and/or any arbitral award that is not subject to appeal, against the Company, provided that this has relevant adverse effects on its status (financial or of any nature) on its businesses, assets operational results and/or perspectives, preventing the Company from complying with any obligation set forth in the Contract.
Nature and reason for the transaction/other relevant information	The applicable interest rate is: 112.6% CDI per annum /in reais

Name of related party	Banco do Brasil S.A.
Date of transaction	11/11/2015
Amount (R$)	R$1,500,000,000.00
Current balance (R$)	R$1,528,849,751.43
Amount of related party	Not applicable
Duration	10/10/2022
Loan or other type of debt	YES
Interest rate	110.00000%

Table of Contents

Relationship with the Issuer	Banco do Brasil sponsors the private pension fund of bank employees, Previ - Caixa de Previdência dos Funcionários do Banco do Brasil, which, in turn, is the parent company of Litel Participações S.A. (Litel) holding that holds controlling interests in Valepar
Purpose of the contract	Export Credit Note (NCE) used to reinforce working capital, aiming to support production of assets to be exported, as well as supporting and complementing activities essential to exporting
If issuer is creditor or debtor	Debtor
Guaranties and insurance	None.
Conditions of termination or expiration	Conditions for early termination: a) the Company fails to pay Financial Fees or the Principal on the respective due dates; b) the Company files for bankruptcy, judicial or extrajudicial recovery or bankruptcy is filed judicially by third parties and is not solved by the Company within 45 days, from the notice day; c) in case of Company liquidation, extinction or dissolution, or end of activities, for any reason; d) directly or through agents or proxies, if the Company provides Banco do Brasil S.A., within execution of obligations provided for under the Contract, with incomplete or untrue information, including by means of private or public document of any nature, provided that acting with evident guilt, willingness or bad faith; e) in case of contractual non-compliance by the Company, there is early maturity of other financing by the Company with Banco do Brasil S.A. which outstanding amount, severally or jointly, is equal or higher than US$ 50,000,000.00, or equivalent in other currency; f) change to the Company corporate purpose, as set forth in the by-laws current on the Contract date, provided that, as consequence, the Company is no longer engaged in mining activities; g) the Company fails to comply with any judicial final decision and/or any arbitral award that is not subject to appeal, against the Company, provided that this has relevant adverse effects on its status (financial or of any nature) on its businesses, assets operational results and/or perspectives, preventing the Company from complying with any obligation set forth in the NCE.
Nature and reason for the transaction/other relevant information	The applicable interest rate is 110% CDI per annum in reais

Name of related party	Banco do Brasil S.A., New York Branch
Date of transaction	6/30/2010
Amount (R$)	R$1,952,400,000.00
Current balance (R$)	R$1,952,668,455.00
Amount of related party	Not applicable
Duration	10/30/2020
Loan or other type of debt	YES
Interest rate	2.100000%
Relationship with the Issuer	Banco do Brasil sponsors the private pension fund of bank employees, Previ - Caixa de Previdência dos Funcionários do Banco do Brasil, which, in turn, is the parent company of Litel Participações S.A. (Litel) holding that holds controlling interests in Valepar
Purpose of the contract	Pre-Payment Exportation
If issuer is creditor or debtor	Debtor
Guaranties and insurance	None.
Conditions of termination or expiration	Conditions for early termination: a) the Company fails to pay Financial Fees or the Principal on the respective due dates; b) the Company files for bankruptcy, judicial or extrajudicial recovery or bankruptcy is filed judicially by third parties and is not solved by the Company within 45 days, from the notice day; c) in case of Company liquidation, extinction or dissolution, or end of activities, for any reason; d) directly or through

Table of Contents

	agents or proxies, if the Company provides Banco do Brasil S.A., within execution of obligations provided for under the Contract, with incomplete or untrue information, including by means of private or public document of any nature, provided that acting with evident guilt, willingness or bad faith; e) in case of contractual non-compliance by the Company, there is early maturity of other financing by the Company with Banco do Brasil S.A. which outstanding amount, severally or jointly, is equal or higher than US$ 50,000,000.00, or equivalent in other currency; f)breach of any term, condition, or material provision in this contract that is not solved within 20 working days.
Nature and reason for the transaction/other relevant information	The applicable interest rate is Libor + 2.10% per annum
Name of related party	Banco do Brasil S.A.
Date of transaction	1/28/2008
Amount (R$)	R$ 2,000,000,000.00
Current balance (R$)	R$ 2,121,830,945.35
Amount of related party	Not applicable
Duration	1/26/2018
Loan or other type of debt	YES
Interest rate	103.50000%
Relationship with the Issuer	Banco do Brasil sponsors the private pension fund of bank employees, Previ - Caixa de Previdência dos Funcionários do Banco do Brasil, which, in turn, is the parent company of Litel Participações S.A. (Litel) holding that holds controlling interests in Valepar
Purpose of the contract	Export Credit Note (NCE) used to reinforce working capital, aiming to support production of assets to be exported, as well as supporting and complementing activities essential to exporting
If issuer is creditor or debtor	Debtor
Guaranties and insurance	None.
Conditions of termination or expiration	Conditions for early termination: a) the Company fails to pay Financial Fees or the Principal on the respective due dates; b) the Company files for bankruptcy, judicial or extrajudicial recovery or bankruptcy is filed judicially by third parties and is not solved by the Company within 45 days, from the notice day; c) in case of Company liquidation, extinction or dissolution, or end of activities, for any reason; d) directly or through agents or proxies, if the Company provides Banco do Brasil S.A., within execution of obligations provided for under the Contract, with incomplete or untrue information, including by means of private or public document of any nature, provided that acting with evident guilt, willingness or bad faith; e) in case of contractual non-compliance by the Company, there is early maturity of other financing by the Company with Banco do Brasil S.A. which outstanding amount, severally or jointly, is equal or higher than US$ 50,000,000.00, updated monthly, from this date, according to the General Market Price Index IGM-M published by Fundação Getúlio Vargas.
Nature and reason for the transaction/other relevant information	The applicable interest rate is 103,50% CDI per annum in reais.
Name of related party	Banco do Brasil S.A.
Date of transaction	10/16/2012
Amount (R$)	R$ 2,500,000,000.00
Current balance (R$)	R$ 2,577,587,414.39

Table of Contents

Amount of related party	Not applicable
Duration	10/16/2022
Loan or other type of debt	YES
Interest rate	112.00000%
Relationship with the Issuer	Banco do Brasil sponsors the private pension fund of bank employees, Previ - Caixa de Previdência dos Funcionários do Banco do Brasil, which, in turn, is the parent company of Litel Participações S.A. (Litel) holding that holds controlling interests in Valepar
Purpose of the contract	Export Credit Note (NCE) used to reinforce working capital, aiming to support production of assets to be exported, as well as supporting and complementing activities essential to exporting
If issuer is creditor or debtor	Debtor
Guaranties and insurance	None.
Conditions of termination or expiration	Conditions for early termination: a) the Company fails to pay Financial Fees or the Principal on the respective due dates; b) the Company files for bankruptcy, judicial or extrajudicial recovery or bankruptcy is filed judicially by third parties and is not solved by the Company within 45 days, from the notice day; c) in case of Company liquidation, extinction or dissolution, or end of activities, for any reason; d) directly or through agents or proxies, if the Company provides Banco do Brasil S.A., within execution of obligations provided for under the Contract, with incomplete or untrue information, including by means of private or public document of any nature, provided that acting with evident guilt, willingness or bad faith; e) in case of contractual non-compliance by the Company, there is early maturity of (i) other financing contract(s) by the Company with Banco do Brasil S.A. which outstanding amount, severally or jointly, is equal or higher than US$ 100,000,000.00, or equivalent in domestic currency, obtained from the application of foreign exchange rate in the PTAX 800 report, option 5, from SISBACEN, on the maturity date, which amount on the operation date was equal to R$ 203,690,000.00; and (ii) the Pre-Export Financing Agreement Contract, executed on June 30, 2010 between the issuer and Banco do Brasil S.A., due to event provided for in clause 11, line d in the contract in the amount of US$ 50,000,000,00, or equivalent in domestic currency, obtained from the application of foreign exchange rate in the PTAX 800 report, option 5, from SISBACEN.
Nature and reason for the transaction/other relevant information	The applicable interest rate is 112% CDI per annum in reais.

Name of related party	Banco do Brasil S.A.
Date of transaction	6/30/2010
Amount (R$)	R$ 57,201,535.99
Current balance (R$)	R$ 27,550,452.78
Amount of related party	Not applicable
Duration	7/15/2020
Loan or other type of debt	YES
Interest rate	4.500000
Relationship with the Issuer	Banco do Brasil succeeded Banco Votorantim S/A in this operation and sponsors the private pension fund of bank employees, Previ - Caixa de Previdência dos Funcionários do Banco do Brasil, which, in turn, is the parent company of Litel Participações S.A. (Litel) holding that holds controlling interests in Valepar
Purpose of the contract	Financing acquisition of 4 coal, coking, and ore handling systems and 1 recovery equipment, initially executed with Banco Votorantim S/A and later granted to Banco do Brasil S.A. on October 28, 2011.
If issuer is creditor or debtor	Debtor

Table of Contents

Guaranties and insurance	None.
Conditions of termination or expiration	Circumstances for early termination: a) non-compliance with the terms in articles 39 and 40 in Terms applicable to BNDES Contracts ; b) in case of false statement, information or document provided by Vale; c) if Vale has any executed bond, and the execution is unjustified for 60 days and materially affects Vale s capacity to pay for this contract, start any judicial or extrajudicial recovery procedure or files for bankruptcy or bankruptcy is claimed by third parties; d) in case of incorporation, merger, or division of Vale, unless that (i) the resulting company is Vale itself; or (ii) the resulting company complies with financial rates established in the contract; e) if Vale ceases its activities; f) as the case may be, if Vale is subject to intervention by the Central Bank of Brazil; g) if asset(s) object of financial collaboration is(are) subject to attachment, seizure, possession, collection under bankruptcy procedure, or any other judicial or administrative measure; h) if Vale fails to comply with any clause or condition in the Contract; i) if there is a final conviction due to engagement in acts, by Vale, that consist crime against the environment or non-compliance with the legislation related to child or forced labor.
Nature and reason for the transaction/other relevant information	The applicable interest rate is 4,5% per annum

Name of related party	Banco do Brasil S.A.
Date of transaction	6/30/2010
Amount (R$)	R$ 59,786,258.47
Current balance (R$)	R$ 34,373,806.92
Amount of related party	Not applicable
Duration	7/15/2020
Loan or other type of debt	YES
Interest rate	4.500000
Relationship with the Issuer	Banco do Brasil sponsors the private pension fund of bank employees, Previ - Caixa de Previdência dos Funcionários do Banco do Brasil, which, in turn, is the parent company of Litel Participações S.A. (Litel) holding that holds controlling interests in Valepar
Purpose of the contract	Funding acquisition of Long Distance Belt Carrier System
If issuer is creditor or debtor	Debtor
Guaranties and insurance	None.
Conditions of termination or expiration	Circumstances for early termination: a) non-compliance with the terms in articles 39 and 40 in Terms applicable to BNDES Contracts ; b) in case of false statement, information or document provided by Vale; c) if Vale has any executed bond, and the execution is unjustified for 60 days and materially affects Vale s capacity to pay for this contract, start any judicial or extrajudicial recovery procedure or files for bankruptcy or bankruptcy is claimed by third parties; d) in case of incorporation, merger, or division of Vale, unless that (i) the resulting company is Vale itself; or (ii) the resulting company complies with financial rates established in the contract; e) if Vale ceases its activities; f) as the case may be, if Vale is subject to intervention by the Central Bank of Brazil; g) if asset(s) object of financial collaboration is(are) subject to attachment, seizure, possession, collection under bankruptcy procedure, or any other judicial or administrative measure; h) if Vale fails to comply with any clause or condition in the Contract; i) if there is a final conviction due to engagement in acts, by Vale, that consist crime against the environment or non-compliance with the legislation related to child or forced labor.

Table of Contents

Nature and reason for the transaction/other relevant information	The applicable interest rate is 4,5% per annum
Name of related party	Banco do Brasil S.A.
Date of transaction	6/30/2010
Amount (R$)	R$ 17.840.262,66
Current balance (R$)	R$ 8.075.484,04
Amount of related party	Not applicable
Duration	7/15/2020
Loan or other type of debt	SIM
Interest rate	4,500000
Relationship with the Issuer	Banco do Brasil sponsors the private pension fund of bank employees, Previ - Caixa de Previdência dos Funcionários do Banco do Brasil, which, in turn, is the parent company of Litel Participações S.A. (Litel) holding that holds controlling interests in Valepar
Purpose of the contract	Funding acquisition of car-dumper
If issuer is creditor or debtor	Debtor
Guaranties and insurance	None.
Conditions of termination or expiration	Circumstances for early termination: a) non-compliance with the terms in articles 39 and 40 in Terms applicable to BNDES Contracts ; b) in case of false statement, information or document provided by Vale; c) if Vale has any executed bond, and the execution is unjustified for 60 days and materially affects Vale s capacity to pay for this contract, start any judicial or extrajudicial recovery procedure or files for bankruptcy or bankruptcy is claimed by third parties; d) in case of incorporation, merger, or division of Vale, unless that (i) the resulting company is Vale itself; or (ii) the resulting company complies with financial rates established in the contract; e) if Vale ceases its activities; f) as the case may be, if Vale is subject to intervention by the Central Bank of Brazil; g) if asset(s) object of financial collaboration is(are) subject to attachment, seizure, possession, collection under bankruptcy procedure, or any other judicial or administrative measure; h) if Vale fails to comply with any clause or condition in the Contract; i) if there is a final conviction due to engagement in acts, by Vale, that consist crime against the environment or non-compliance with the legislation related to child or forced labor.
Nature and reason for the transaction/other relevant information	The applicable interest rate is 4,5% per annum
Name of related party	Banco do Brasil S.A.
Date of transaction	6/30/2010
Amount (R$)	R$ 175.882.585,50
Current balance (R$)	R$ 124.436.528,93
Amount of related party	Not applicable
Duration	7/15/2020
Loan or other type of debt	SIM
Interest rate	4,500000
Relationship with the Issuer	Banco do Brasil sponsors the private pension fund of bank employees, Previ - Caixa de Previdência dos Funcionários do Banco do Brasil, which, in turn, is the parent company of Litel Participações S.A. (Litel) holding that holds controlling interests in Valepar

Table of Contents

Purpose of the contract	Funding acquisition of 2,558 railroad wagons to carry iron ore
If issuer is creditor or debtor	Debtor
Guaranties and insurance	None.
Conditions of termination or expiration	Circumstances for early termination: a) non-compliance with the terms in articles 39 and 40 in Terms applicable to BNDES Contracts ; b) in case of false statement, information or document provided by Vale; c) if Vale has any executed bond, and the execution is unjustified for 60 days and materially affects Vale s capacity to pay for this contract, start any judicial or extrajudicial recovery procedure or files for bankruptcy or bankruptcy is claimed by third parties; d) in case of incorporation, merger, or division of Vale, unless that (i) the resulting company is Vale itself; or (ii) the resulting company complies with financial rates established in the contract; e) if Vale ceases its activities; f) as the case may be, if Vale is subject to intervention by the Central Bank of Brazil; g) if asset(s) object of financial collaboration is(are) subject to attachment, seizure, possession, collection under bankruptcy procedure, or any other judicial or administrative measure; h) if Vale fails to comply with any clause or condition in the Contract; i) if there is a final conviction due to engagement in acts, by Vale, that consist crime against the environment or non-compliance with the legislation related to child or forced labor; j) application of financing funds for purposes other than the purpose in the contract; k) inclusion in corporate agreement, by-laws, or acts of association of Vale, of a term under which a special quorum is requested to deliberate or approve matters that limit its control by the respective controllers, or, also, inclusion in those documents of term that cause: (i) restrictions to the growth capacity of Vale or its technological development; (ii) restrictions to access new markets; or (iii) restrictions or prejudice to the statute of limitations applicable to the payment of financial obligations arising out of this operation.
Nature and reason for the transaction/other relevant information	The applicable interest rate is 4,5% per annum

Name of related party	Fundo de Investimento em Participações Multisetorial Plus II (FIP Plus II)
Date of transaction	7/29/2015
Amount (R$)	R$4,000,000,000.00
Current balance (R$)	Not applicable
Amount of related party	R$4,000,000,000.00
Duration	Undetermined
Loan or other type of debt	No
Interest rate	Not applicable
Relationship with the Issuer	The current shareholder of FIP Plus II, Banco Bradesco BBI S.A., is part of the same economic group as Bradespar S.A., which holds controlling interest at Valepar S.A. (Valepar), *holding* and parent company of Vale.
Purpose of the contract	Purchase and sale of preferred shares class A issued by Minerações Brasileiras Reunidas S.A. MBR (MBR) and held by Vale, representing 36.4% of the total capital stock of MBR.
If issuer is creditor or debtor	Not applicable.
Guaranties and insurance	None.
Conditions of termination or expiration	Vale has executed on July 29, 201, a Contract for Purchase and Sale of Shares and other issues, with Fundo de Investimento em Participações Multisetorial Plus II (FIP Plus II), which shares are held on this date by Banco Bradesco BBI S.A. (BBI), under which Vale promised to sell preferred shares class A, representing 36.4% of the capital stock of Minerações Brasileiras Reunidas S.A. MBR (MBR), for R$4.0 billion, subject

591

Table of Contents

	to suspension conditions usually applicable, including prior approval by CADE. On September 1, 2015, the sale was concluded for the agreed price, which was transferred as a lump sum on that date, and Vale, directly and indirectly, holds 61.9% of the total capital stock and 98.3% of the common capital of MBR. Vale also holds a buy-out option of shares issued by MBR currently held by BBI, successor of FIP Plus II.
Nature and reason for the transaction/other relevant information	
Name of related party	Banco Nacional de Desenvolvimento Econômico e Social BNDES
Date of transaction	6/19/2015
Amount (R$)	Not applicable
Current balance (R$)	Not applicable
Amount of related party	BNDES is entitled to 1/3 (one third) of the economic rights arising out of Projeto Alemão.
Duration	The contract shall remain in force (i) during the term of the obligation to indemnify the Parties; or (ii) until termination of Vale s royalty payment obligation; or (iii) upon agreement in this sense, in writing, by the Parties.
Loan or other type of debt	No
Interest rate	
Relationship with the Issuer	BNDES Participações S.A. - BNDESPAR, wholly-owned subsidiary of BNDES, holds interest at Valepar S.A., which is the parent company of Vale.
Purpose of the contract	Regulate the right to economic rights held by BNDES in case of development by Vale of Projeto Alemão, as provided for under the terms in the Advancement Contract for Future Interest , executed on 3/5/1985, by the payment of royalties by Vale to BNDES.
	Projeto Alemão is a Vale project in the area of Carajás, in the State of Pará, which has not been approved, that aims production of copper concentrate.
	According to the Advancement Contract for Future Interest, BNDES is entitled to 1/3 (one third) of the economic rights arising out of Projeto Alemão. Therefore, BNDES share in this project was regulated by the payment of royalties, determined by using the economic model with market premises.
	The royalties should be paid annually *by* Vale upon beginning to sell the /copper concentrate from Projeto Alemão.
	The royalties correspond to 2.5% on annual net income of Projeto Alemão, and years when the annual average of copper prices, as disclosed by LME, reaches USD 8,000.00/ton (Trigger Price), royalties for these years should be added with 2.25%. The Trigger Price will be annually adjusted according to the *Consumer Price Index (CPI).*
If issuer is creditor or debtor	Debtor
Guaranties and insurance	None.
Conditions of termination or expiration	The payment of royalties will end: (i) upon termination of exploration activities in Projeto Alemão, at Vale s discretion; (ii) loss of title by Vale or any assignee, allowed under the terms in the Contract, in process DNPM No. 851.431/82; or (iii) depletion of mineral reserves in the area covered by Process DNPM No. 851.431/82.

Nature and reason for the transaction/other relevant information	

Table of Contents

Name of related party	Banco Nacional de Desenvolvimento Econômico e Social - BNDES
Date of transaction	10/08/2007
Amount (R$)	R$ 774,568,410.00
Current balance (R$)	R$ 270,719,374.35
Amount of related party	Not applicable
Duration	09/15/2019
Loan or other type of debt	YES
Interest rate	1.800000%
Relationship with the Issuer	Indirect controlling shareholder
Purpose of the contract	Funding for expansion of transport capacity of Carajás Railroad
If issuer is creditor or debtor	Debtor
Guaranties and insurance	None
Conditions of termination or expiration	BNDES may terminate the contract in advance, with the enforceability of the debt and immediate suspension of any disbursement, if in addition to the cases set forth in Articles 39 and 40 of PROVISIONS APPLICABLE TO BNDES CONTRACTS, the following are certified by BNDES: a) reducing Vale s staff without offering training programs and/or replacement programs for workers in other companies; b) inclusion in Vale bylaws, statute or contract, of a provision by which a special quorum is required for deliberation or approval of matters limiting or restricting Vale or its controlling shareholders, or even the inclusion therein, of conditions leading to: i) restrictions on Vale s ability to grow or its technological development; ii) restrictions on Vale s access to new markets; or iii) restrictions or loss of ability to pay financial obligations resulting from this operation; c) the use of proceeds to finance any purpose other than the expansion of Carajás railroad s transport capacity to 103 million tons transported annually; d) give, without prior authorization from BNDES, guaranties of any kind in operations with other creditors without the same quality of guaranties provided to BNDES, with equal priority of payment;

e) not observing the following ratios during the term of the contract:

• Adjusted EBITDA debt ratio less than or equal to 4.5 (provided only that regarding calculations to be made based on financial results for fiscal years 2015 and 2016, the 5.5 rate shall prevail), and

• Adjusted EBITDA ratio of Interest Expense greater than or equal to 2.0.

And, in case these ratios are not observed, guarantees an amount equivalent to at least 130% of the debt, as stipulated by BNDES within 60 days from the date of written communication.

In case the proceeds granted under this Contract are used for any purpose other than the expansion of the Carajás railroad s annual transport capacity to 103 million tons, BNDES, without prejudice to the provisions, will inform the Federal Public Prosecutor, pursuant to the terms of Law No. 7492 of 06.16.86.

This contract will also expire, with the enforceability of the debt and suspension of any immediate disbursement, at the date of installing as a Federal Deputy or Senator or any person remunerated by Vale, or any owner, shareholder, or director of Vale, or any person listed in the prohibitions provided by the Federal Constitution, article 54, paragraphs I and II. There will be no impact on charges

Table of Contents

	of default, provided that the debt payment occurs within five (5) business days as of the date of installing, under risk of, if in default, assuming all charges related to the assumptions set forth above for early expiration by default.
Nature and reason for the transaction/other relevant information	The change in indirect control of Vale, during the term of the Contract, is excluded from the possibility of early expiration by default. Applicable interest rate is: TJLP (long-term interest rate) +1.8% per year.
Name of related party	Banco Nacional de Desenvolvimento Econômico e Social BNDES
Date of transaction	03/28/2008
Amount (R$)	R$ 808,350,800.00
Current balance (R$)	R$ 744,719,617.75
Amount of related party	Not applicable
Duration	09/15/2029
Loan or other type of debt	YES
Interest rate	1.600000%
Relationship with the Company	Indirect controlling shareholder
Purpose of the contract	Financing for installation of the UHE Estreito Hydroelectric Power Plant
If issuer is creditor or debtor	Debtor
Guaranties and insurance	None
Conditions of termination or expiration	BNDES may terminate this contract in advance, with the enforceability of the debt and immediate suspension of any disbursement, if in addition to the cases set forth in Articles 39 and 40 of PROVISIONS APPLICABLE TO BNDES CONTRACTS, the following are certified by BNDES: a) reducing Vale s staff without providing training programs and/or replacement programs for workers in other companies; b) inclusion in Vale bylaws, statute, or contract, of a provision by which a special quorum is required for deliberation or approval of matters limiting or restricting control of any of these companies by the respective controlling shareholders, or even the inclusion therein, of conditions leading to: i) restrictions on Vale s ability to grow or its technological development; ii) restrictions on Vale s access to new markets; or

iii) restrictions or loss of ability to pay financial obligations resulting from this operation;

c) give, without prior authorization from BNDES, guaranties of any kind in operations with other creditors without the same quality of guaranties provided to BNDES, with equal priority of payment;

d) not observing the following ratios during the term of the contract:

• Adjusted EBITDA debt ratio less than or equal to 4.5 (provided only that regarding calculations to be made based on financial results for fiscal years 2015 and 2016, the 5.5 rate shall prevail), and

• Adjusted EBITDA ratio of Interest Expense greater than or equal to 2.0.

And, in case these ratios are not observed, guarantees an amount equivalent to at least 130% of the debt, as stipulated by BNDES, and within 60 days from the date of written communication.

Table of Contents

	In case the proceeds granted under this Contract are used for any purpose other than the installment of the UHE Estreito Hydroelectric Power Plant and its transmission system, BNDES, without prejudice to the terms set forth above in this Clause, will inform the Federal Public Prosecutor, pursuant to the terms of Law No. 7492 of 06.16.86. The contract will also expire, with the enforceability of the debt and immediate suspension of any disbursement, at the date of installing as a Federal Deputy or Senator or any person remunerated by Vale, or any owner, holder or director of Vale, or any person listed in the prohibitions provided by the Federal Constitution, article 54, paragraphs I and II. There will be no impact on charges of default, provided that the debt payment occurs within five (5) business days as of the date of installing, under risk of, if in default, assuming all charges related to the assumptions set forth above for early expiration by default. The change in indirect control of Vale, during the term of the Contract, is excluded from the possibility of early expiration by default.
Nature and reasons for the operation / other relevant information	The applicable interest rates are: TJLP+1.46% per year (subcredits A and B), and TJLP (subcredit C).
Name of related party	Banco Nacional de Desenvolvimento Econômico e Social - BNDES
Date of Transaction	12/26/2008
Amount (R$)	R$ 7,300,000.000.00
Current balance (R$)	R$ 6,464,743,306.88
Amount of related party	Not applicable
Duration	02/15/2023
Loan or other type of debt	YES
Interest rate	1.5%
Relationship with the Company	Indirect controlling shareholder
Purpose of the contract	Credit facility
If issuer is creditor or debtor	Debtor
Guaranties and insurance	None
Conditions of termination or expiration	BNDES may terminate this contract in advance, with the enforceability of the debt and immediate suspension of any disbursement, if in addition to the cases set forth in Articles 39 and 40 of PROVISIONS APPLICABLE TO BNDES CONTRACTS, the following are certified by BNDES: a) reducing Vale s staff without providing training programs and / or replacement programs for workers in other companies; b) the existence of a definitive legal judgment on the performance of acts by Vale consisting of an infringement of legislation which deals with combating discrimination based on race or gender, child labor and forced labor;

c) inclusion in Vale bylaws, statute, or contract, of a provision by which a special quorum is required for deliberation or approval of matters limiting or restricting control of any of these companies by the respective controlling shareholders, or even the inclusion therein, of conditions leading to:

i) restrictions on Vale s ability to grow or its technological development;

ii) restrictions on Vale s access to new markets, or

iii) restrictions or loss of ability to pay financial obligations resulting from this operation;

Table of Contents

	d) if required levels are not met within 60 days from the date of written notification by BNDES, not provide actual guarantees, accepted by BNDES, in value corresponding to at least 130% of the debt, except when in such period, levels described below are met: • Adjusted EBITDA debt ratio less than or equal to 4.5 (provided only that regarding calculations to be made based on financial results for fiscal years 2015 and 2016, the 5.5 rate shall prevail), and • Adjusted EBITDA ratio of Interest Expense greater than or equal to 2.0. In case of change of indirect control of VALE, without prior authorization from BNDES, does not submit a letter of guaranty issued according to the BNDES model. In the event proceeds granted under this contract are used for a purpose different from that provided for in Clause First: revolving credit limit, BNDES, notwithstanding above provisions, will notify the fact to the Federal Public Prosecutor pursuant to the terms of Law No. 7,492 of 06.16.86. The contract will also expire, with the enforceability of the debt and immediate suspension of any disbursement, at the date of installing as a Federal Deputy or Senator or anyone who is remunerated by Vale, or any owner, holder or director of Vale, or any person listed the prohibitions provided by the Federal Constitution, article 54, paragraphs I and II. There will be no impact on charges of default, provided that the debt payment occurs within five (5) business days as of the date of installing, under risk of, if in default, assuming all charges related to the assumptions set forth above for early expiration by default.
Nature and Reasons for the operation / other relevant information	The applicable interest rates are: Libor 3M+1.5% per year (subcredit A1, A2, A3, A4, A5, A6, A7, A8), Libor 3M + 2.0% per year (subcredits A9 and A10), TJLP (subcredits B4, B11, B15 and B18), TJLP + 1.30% per year (subcredit B17). TJLP + 1.36% per year (subcredits B2, B3, B6, B7, B9, B10, B13 and B14.). TJLP + 1.76% per year (subcredits B1, B5, B8 and B12). This is a Credit facility for financing Salobo I and II, Mineração Onça Puma, and Usina VIII and Itabira Capital Projects.
Name of related party	Banco Nacional de Desenvolvimento Econômico e Social - BNDES
Date of transaction	09/24/2012
Amount (R$)	R$ 3,882,956,000.00
Current balance (R$)	R$ 2,981,486,812.03
Amount of related party	Not applicable
Duration	09/15/2022
Loan of other type of debt	YES
Interest rate	1.300000%
Relationship with the Company	Indirect controlling shareholder
Purpose of the contract	

	Financing to implement the Training Program for the Northern Logistic System (CLN), in order to increase the mineral transportation capacity from 115 million tons per year (Mtpa) to approximately 150 Mtpa.
If issuer is creditor or debtor	Debtor
Guaranties and insurance	None
Conditions of termination or expiration	BNDES may terminate this contract in advance, with the enforceability of the debt and immediate suspension of any disbursement, if in addition to the cases set forth in Articles 39 and 40 of PROVISIONS APPLICABLE TO BNDES CONTRACTS, the following are certified by BNDES:

Table of Contents

a) reducing Vale s staff without providing training programs and / or replacement programs for workers in other companies

b) the existence of a definitive legal judgment on the performance of acts by Vale consisting of an infringement of legislation which deals with combating discrimination based on race or gender, child labor and forced labor;

c) inclusion in Vale bylaws, statute, or contract, of a provision by which a special quorum is required for deliberation or approval of matters limiting or restricting control of any of these companies by the respective controlling shareholders, or even the inclusion therein, of conditions leading to:

i) restrictions on Vale s ability to grow or its technological development;

ii) restrictions on Vale s access to new markets; or

iii) restrictions or loss of ability to pay financial obligations resulting from this operation;

d) if required levels are not met within 60 days from the date of written notification by BNDES, not provide actual guarantees, accepted by BNDES, in value corresponding to at least 130% of the debt, except when in such period, levels described below are met:

• Adjusted EBITDA debt ratio less than or equal to 4.5 (provided only that regarding calculations to be made based on financial results for fiscal years 2015 and 2016, the 5.5 rate shall prevail), and
• Adjusted EBITDA ratio of Interest Expense greater than or equal to 2.0.

In case of change of indirect control of Vale, without prior authorization from BNDES, does not submit a letter of guaranty issued according to the BNDES model.

	In the event proceeds granted under this contract are used for a purpose different from that provided for in First Clause: implementation of Training Program for the Northern Logistics System (CLN), with the purpose of increasing ore transportation from 115 million tons per year (Mtpa) to approximately 150 Mtpa. The contract will also expire, with the enforceability of the debt and immediate suspension of any disbursement, at the date of installing as a Federal Deputy or Senator or anyone who is remunerated by Vale, or any owner, holder or director of Vale, or any person listed the prohibitions provided by the Federal Constitution, article 54, paragraphs I and II. There will be no impact on charges of default, provided that the debt payment occurs within five (5) business days as of the date of installing, under risk of, if in default, assuming all charges related to the assumptions set forth above for early expiration by default.
Nature and reasons for the operation / other relevant information	Applicable interest rates are: TJPL + 1.30% per year (subcredits A, B, C, D, and E), 1.30% per year (subcredits F and G) and, TJPL (subcredits H).
Name of related party	Banco Nacional de Desenvolvimento Econômico e Social BNDES
Date of transaction	12/27/2013
Amount (R$)	R$136,700,000.00
Current balance (R$)	R$137,583,779.41
Amount of related party	Not applicable
Duration	1/15/2022
Loan of other type of debt	YES
Interest rate	3.50000%
Relationship with the Company	Indirect controller
Purpose of the contract	Funding to support the 2013-2015 investment plan for technological development of the Tecnored process.

Table of Contents

If issuer is Creditor or Debtor	Debtor
Guaranties and insurance	Vale s corporate guarantee
Conditions of termination or expiration	BNDES may terminate the contract in advance, with the enforceability of the debt and immediate suspension of any disbursement, if in addition to the cases set forth in Articles 39 and 40 of PROVISIONS APPLICABLE TO BNDES CONTRACTS, the following are certified by BNDES: a) reducing Vale s staff without offering training programs and/or replacement programs for workers in other companies b) the existence of a definitive legal judgment on the performance of acts by Tecnored consisting of an infringement of legislation which deals with child labor, forced labor, or crime against the environment; c) inclusion in Tecnored bylaws, statute or contract, of a provision by which a special quorum is required for deliberation or approval of matters limiting or restricting the control of any of these companies by the respective controlling shareholders, or even the inclusion therein, of conditions leading to: i) restrictions on Tecnored s ability to grow or its technological development; ii) restrictions on Tecnored s access to new markets; or iii) restrictions or loss of ability to pay financial obligations resulting from this operation; Non-compliance by Tecnored with following ratios during the term of the contract: • Adjusted EBITDA debt ratio less than or equal to 4.5 (provided only that regarding calculations to be made based on financial results for fiscal years 2015 and 2016, the 5.5 rate shall prevail), and • Adjusted EBITDA ratio of Interest Expense greater than or equal to 2.0 And, in case these ratios are not observed, guarantees an amount equivalent to at least 130% of the debt, as stipulated by BNDES within 60 days from the date of written communication. In case of change of indirect control of Tecnored, without prior authorization from BNDES, and Tecnored does not submit a letter of guaranty issued according to the

	BNDES model. In case the proceeds granted under this Contract are used for any purpose other than the one set forth in Clause One: 2013-2015 investment plan for technological development in the Tecnored process, BNDES, without prejudice to the provisions, will inform the Federal Public Prosecutor, pursuant to the terms of Law No. 7492 of 06.16.86. This contract will also expire, with the enforceability of the debt and suspension of any immediate disbursement, at the date of installing as a Federal Deputy or Senator or any person remunerated by Tecnored, or any owner, shareholder, or director of Vale, or any person listed in the prohibitions provided by the Federal Constitution, article 54, paragraphs I and II. There will be no impact on charges of default, provided that the debt payment occurs within five (5) business days as of the date of installing, under risk of, if in default, assuming all charges related to the assumptions set forth above for early expiration by default.
Nature and reasons for the operation / other relevant information	Available interest rate: 3.5% per year fixed in reais
Name of related party	Banco Nacional de Desenvolvimento Econômico e Social - BNDES
Date of transaction	05/19/2014

Table of Contents

Amount (R$)	R$ 3,636,571,000.00
Current balance (R$)	R$ 2,300,131,523.31
Amount of related party	Not applicable
Duration	06/15/2024
Loan or other type of debt	YES
Interest rate	1.460000%
Relationship with the Company	Indirect Controlling shareholder
Purpose of the contract	Financing to deploy the Programa de Capacitação do Sistema Logístico Norte (CLN), aiming to increase the ore transportation capacity from 150 million tons per year (Mtpa) to 230 Mtpa, approximately
If issuer is Creditor or Debtor	Debtor
Guaranties and insurance	None
Conditions of termination or expiration	BNDES may terminate this contract in advance, with the enforceability of the debt and immediate suspension of any disbursement, if in addition to the cases set forth in Articles 39 and 40 of PROVISIONS APPLICABLE TO BNDES CONTRACTS, the following are certified by BNDES:

a) reducing Vale s staff without providing training programs and / or replacement programs for workers in other companies;

b) the existence of a definitive legal judgment on the performance of acts by Vale consisting of crime against the environment or an infringement of legislation which deals with combating discrimination based on race or gender, child labor and forced labor, except when there is imposed repair or during compliance with the penalty imposed to Vale, according to due process of law;

c) inclusion in Vale bylaws, statute or contract, of a provision by which a special *quorum* is required for deliberation or approval of matters limiting or restricting its control, or even the inclusion therein, of conditions leading to:

i) restrictions on Vale s ability to grow or its technological development;

ii) restrictions on Vale s access to new markets, or

iii) restrictions or loss of ability to pay financial obligations resulting from this operation;

d) in case of failure to meet established levels in 60 days from the date of written notice by BNDES, failure to provide guarantees accepted by BNDES in amount corresponding at least to 130% of the debt, unless when in that term, levels described below are reestablished:

• Adjusted EBITDA debt ratio less than or equal to 4.5 (provided only that regarding calculations to be made based on financial results for fiscal years 2015 and 2016, the 5.5 rate shall prevail), and

• Adjusted EBITDA ratio of Interest Expense greater than or equal to 2.0.

And, in case of change to Vale s indirect control, without prior authorization by BNDES, followed by failure to present the letter of guarantee issued according to the BNDES model.

In the event proceeds granted under this contract are used for a purpose different from that provided for: deployment of the Programa de Capacitação do Sistema Logístico Norte (CLN), aiming to increase the ore transportation capacity from 150 million tons per year (Mtpa) to 230 Mtpa, approximately

The contract will also expire, with the enforceability of the debt and immediate suspension of any disbursement, at the date of installing as a Federal Deputy or Senator or anyone who is remunerated at Vale, or any owner, holder or director, or any person listed the prohibitions provided by the Federal Constitution, article 54, paragraphs I and II. There will be no impact on charges of default, provided that the debt payment occurs within five (5) business days as of the date of installing, under risk of, if in default,

Table of Contents

	assuming all charges related to the assumptions set forth above for early expiration by default.
Nature and reasons for the operation / other relevant information	Applicable interest rate: TJLP + 1.46% per year (subcredits A, B and C), and TJLP (subcredit D).
Name of related party	Banco Nacional de Desenvolvimento Econômico e Social - BNDES
Date of transaction	05/19/2014
Amount (R$)	R$ 2,527,103,000.00
Current balance (R$)	R$ 1,216,118,890.48
Amount of related party	Not applicable
Duration	07/15/2024
Loan or other type of debt	YES
Interest rate	1.960000%
Relationship with the Company	Indirect controlling shareholder
Purpose of the contract	Financing to deploy a mining plant and an iron ore processing plant, with capacity of 90 million tons per year, to explore field S11D, in the city of Canaã dos Carajás (PA)
If issuer is Creditor or Debtor	Debtor
Guaranties and insurance	None
Conditions of termination or expiration	BNDES may terminate this contract in advance, with the enforceability of the debt and immediate suspension of any disbursement, if in addition to the cases set forth in Articles 39 and 40 of PROVISIONS APPLICABLE TO BNDES CONTRACTS, the following are certified by BNDES: a) reducing Vale s staff without providing training programs and / or replacement programs for workers in other companies; b) the existence of a definitive legal judgment on the performance of acts by Vale consisting of crime against the environment or an infringement of legislation which deals with combating discrimination based on race or gender, child labor and forced labor, except when there is imposed repair or during compliance with the penalty imposed to Vale, according to due process of law; c) inclusion in Vale bylaws, statute or contract, of a provision by which a special *quorum* is required for deliberation or approval of matters limiting or restricting its control, or even the inclusion therein, of conditions leading to: i) restrictions on Vale s ability to grow or its technological development; ii) restrictions on Vale s access to new markets, or iii) restrictions or loss of ability to pay financial obligations resulting from this operation;

d) in case of failure to meet established levels in 60 days from the date of written notice by BNDES, failure to provide guarantees accepted by BNDES in amount corresponding at least to 130% of the debt, unless when in that term, levels described below are reestablished:

• Adjusted EBITDA debt ratio less than or equal to 4.5 (provided only that regarding calculations to be made based on financial results for fiscal years 2015 and 2016, the 5.5 rate shall prevail), and

• Adjusted EBITDA ratio of Interest Expense greater than or equal to 2.0.

Table of Contents

	And, in case these ratios are not observed, guarantees an amount equivalent to at least 130% of the debt, as stipulated by BNDES, and within 60 days from the date of written communication.
	In the event proceeds granted under this contract are used for a purpose different from that provided for.
	The contract will also expire, with the enforceability of the debt and immediate suspension of any disbursement, at the date of installing as a Federal Deputy or Senator or anyone who is remunerated at Vale, or any owner, holder or director, or any person listed the prohibitions provided by the Federal Constitution, article 54, paragraphs I and II. There will be no impact on charges of default, provided that the debt payment occurs within five (5) business days as of the date of installing, under risk of, if in default, assuming all charges related to the assumptions set forth above for early expiration by default.
	Change to Vale s indirect control, during the effectiveness of this Agreement, is excluded from early maturity circumstances.
Nature and reasons for the operation / other relevant information	Applicable interest rate: TJLP + 1.96% per year (subcredit A), Currency Basket + 1.96% (subcredit B) and TJLP (subcredit C)
Name of related party	Banco Nacional de Desenvolvimento Econômico e Social - BNDES
Date of transaction	10/19/2012
Amount (R$)	R$ 88,635,000.00
Current balance (R$)	R$ 56,606,969.77
Amount of related party	**Not applicable**
Duration	11/15/2018
Loan or other type of debt	YES
Interest rate	1.70%
Relationship with the Company	Indirect controlling shareholder
Purpose of the contract	Financing to complement Phase III of Vale Fertilizantes
If issuer is Creditor or Debtor	Debtor
Guaranties and insurance	Vale s Corporate Guarantee
Conditions of termination or expiration	BNDES may terminate this contract in advance, with the enforceability of the debt and immediate suspension of any disbursement, if in addition to the cases set forth in Articles 39 and 40 of PROVISIONS APPLICABLE TO BNDES CONTRACTS, the following are certified by BNDES:
	a) reducing Vale Fertilizantes staff without providing training programs and / or replacement programs for workers in other companies;
	b) the existence of a definitive legal judgment on the performance of acts by Vale Fertilizantes consisting of an infringement of legislation which deals with combating discrimination based on race or gender, child labor and forced labor;

c) inclusion in Vale Fertilizantes bylaws, statute or contract, of a provision by which a special *quorum* is required for deliberation or approval of matters limiting or restricting Vale or its controlling shareholders, or even the inclusion therein, of conditions leading to:

i) restrictions on Vale Fertilizantes ability to grow or its technological development;

ii) restrictions on Vale Fertilizantes access to new markets, or

iii) restrictions or loss of ability to pay financial obligations resulting from this operation;

Not observing the following ratios during the term of the contract:

• Adjusted EBITDA debt ratio less than or equal to 4.5 (provided only that regarding calculations to be made based on financial results for fiscal years 2015 and 2016, the 5.5 rate shall prevail), and

Table of Contents

	• Adjusted EBITDA ratio of Interest Expense greater than or equal to 2.0.
	And, in case these ratios are not observed, guarantees an amount equivalent to at least 130% of the debt, as stipulated by BNDES, and within 60 days from the date of written communication.
	In case of change of indirect control of Vale Fertilizantes, without prior authorization from BNDES, does not submit a letter of guaranty issued according to the BNDES model.
	In the event proceeds granted under this contract are used for a purpose different from that provided for in First Clause: acquisition of wagons, BNDES, notwithstanding above provisions, will notify the fact to the Federal Public Prosecutor pursuant to the terms of Law No. 7,492 of 06.16.86.
	The contract will also expire, with the enforceability of the debt and immediate suspension of any disbursement, at the date of installing as a Federal Deputy or Senator or anyone who is remunerated by VLI Multimodal, or any owner, holder or director of VLI Multimodal, or any person listed the prohibitions provided by the Federal Constitution, article 54, paragraphs I and II. There will be no impact on charges of default, provided that the debt payment occurs within five (5) business days as of the date of installing, under risk of, if in default, assuming all charges related to the assumptions set forth above for early expiration by default.
Nature and reasons for the operation / other relevant information	Applicable interest rate: TJLP + 1.70% per year (subcredits A, B, and C), TJL`+ 2.70% per year and Currency Basket + 1.70%
Name of related party	Banco Nacional de Desenvolvimento Econômico e Social - BNDES
Date of transaction	10/27/2010
Amount (R$)	R$ 246,636,000
Current balance (R$)	R$ 109,905,279.72
Amount of related party	Not applicable
Duration	11/15/2018
Loan of other type of debt	YES
Interest rate	5.50000%
Relationship with the Company	Indirect controlling shareholder
Purpose of the contract	Funding to expand the production capacity of phosphoric and sulfuric acids in Uberaba (Vale Fertilizantes) and acquisition of machinery and equipment (Phase III Project)
If issuer is Creditor or Debtor	Debtor
Guaranties and insurance	Vale s corporate guarantee
Conditions of termination or expiration	BNDES may terminate this contract in advance, with the enforceability of the debt and immediate suspension of any disbursement, if in addition to the cases set forth in Articles 39 and 40 of PROVISIONS APPLICABLE TO BNDES CONTRACTS, the following are certified by BNDES:

a) reducing Vale Fertilizante s staff without providing training programs and / or replacement programs for workers in other companies;

b) the existence of a definitive legal judgment on the performance of acts by Vale consisting of an infringement of legislation which deals with combating discrimination based on race or gender, child labor and forced labor;

c) inclusion in Vale Fertilizantes bylaws, statute, or contract, of a provision by which a special quorum is required for deliberation or approval of matters limiting or restricting control of any of these companies by the respective controlling shareholders, or even the inclusion therein, of conditions leading to:

i) restrictions on Vale Fertilizantes s ability to grow or its technological development;

ii) restrictions on Vale Fertilizantes s access to new markets, or

iii) restrictions or loss of ability to pay financial obligations resulting from this operation;

Table of Contents

	Non-compliance, during the term of the agreement, with the following rates: • Adjusted EBITDA debt ratio less than or equal to 4.5 (provided only that regarding calculations to be made based on financial results for fiscal years 2015 and 2016, the 5.5 rate shall prevail), and • Adjusted EBITDA ratio of Interest Expense greater than or equal to 2.0. And, in case these ratios are not observed, guarantees an amount equivalent to at least 130% of the debt, as stipulated by BNDES, and within 60 days from the date of written communication. In case of change of indirect control of Vale Fertilizantes, without prior authorization from BNDES, and Vale Fertilizantes does not submit a letter of guaranty issued according to the BNDES model. In the event proceeds granted under this contract are used for a purpose different from that provided for in Clause First: acquisition of wagons, BNDES, notwithstanding above provisions, will notify the fact to the Federal Public Prosecutor pursuant to the terms of Law No. 7,492 of 06.16.86. The contract will also expire, with the enforceability of the debt and immediate suspension of any disbursement, at the date of installing as a Federal Deputy or Senator or anyone who is remunerated by Vale Fertilizantes, or any owner, holder or director of Vale Fertilizantes, or any person listed the prohibitions provided by the Federal Constitution, article 54, paragraphs I and II. There will be no impact on charges of default, provided that the debt payment occurs within five (5) business days as of the date of installing, under risk of, if in default, assuming all charges related to the assumptions set forth above for early expiration by default.
Nature and reasons for the operation / other relevant information	Available interest rate: TJLP + 2.12% per year (Subcredit A), TJLP + 3.12% per year (Subcredit B) and 5.5% per year (Subcredit C) fixed in reais This is the funding for Phase III Project of Vale Fertilizantes.
Name of related party	Banco Nacional de Desenvolvimento Econômico e Social BNDES
Date of transaction	11/23/2010
Amount (R$)	R$ 208,026,000.00
Current balance (R$)	R$ 169,155,053.08
Amount of related party	Not applicable
Duration	9/15/2029

Loan or other type of debt	YES
Interest rate	1.460000%
Relationship with the Issuer	Indirect controlling shareholder
Purpose of the contract	Financing for supplementation of resources relative to installation of Estreito Hydroelectric Power Plant (UHE)
If issuer is Creditor or Debtor	Debtor
Guaranties and insurance	None
Conditions of termination or expiration	BNDES may terminate this contract in advance, with the enforceability of the debt and immediate suspension of any disbursement, if in addition to the cases set forth in Articles 39 and 40 of PROVISIONS APPLICABLE TO BNDES CONTRACTS , the following are certified by BNDES: a) reducing Vale s staff without providing training programs and / or replacement programs for workers in other companies;

Table of Contents

b) the existence of a definitive legal judgment on the performance of acts by the Beneficiary consisting of a crime against the environment or an infringement of legislation which deals with combating discrimination based on child labor and forced labor, in accordance with following provision;

c) inclusion in the bylaws, statute, or contract of Vale or of the other controlling companies, of a provision by which a special *quorum* is required for deliberation or approval of matters limiting or restricting its controlling shareholders, or even the inclusion therein, of conditions leading to:

i) restrictions on Vale s ability to grow or its technological development;

ii) restrictions on Vale s access to new markets, or

iii) restrictions or loss of ability to pay financial obligations resulting from this operation;

d) give, without prior authorization from BNDES, guaranties of any kind in operations with other creditors without the same quality of guaranties provided to BNDES, with equal priority of payment;

e) not observing the following ratios during the term of the contract:

• Adjusted EBITDA debt ratio less than or equal to 4.5 (provided only that regarding calculations to be made based on financial results for fiscal years 2015 and 2016, the 5.5 rate shall prevail), and

• Adjusted EBITDA ratio of Interest Expense greater than or equal to 2.0.

And, in case these ratios are not observed, guarantees an amount equivalent to at least 130% of the debt, as stipulated by BNDES, and within 60 days from the date of written communication.

Termination of the contract in advance based on provisions of Paragraph b above will not occur provided the remedy imposed has been fulfilled or while the penalty imposed to the Beneficiary is being fulfilled following the due legal procedure.

	In the event of any of the situations provided for in Paragraph b above, observing the provisions of above paragraph, BNDES may only declare the expiration in advance of the debt resulting from the Contract within 60 days after giving notice to the Beneficiary. In case proceeds granted under this Contract are used for any purpose other than general investments for installation of UHE Estreito Hydroelectric Power Plant and its transmission system, BNDES, without prejudice to the terms set forth above in this clause, will inform the Federal Public Prosecutor, pursuant to the terms of Law No. 7492 of 16.06.86. The contract will also expire, with the enforceability of the debt and immediate suspension of any disbursement, at the date of installation as a Federal Deputy or Senator or any person remunerated by Vale, or any owner, controller or director of Vale, or any person listed in the prohibitions provided by the Federal Constitution, article 54, paragraphs I and II. There will be no impact on charges of default, provided that the debt payment occurs within five (5) business days as of the date of installing, under risk of, if in default, assuming all charges related to the assumptions set forth above for early expiration by default. The change in indirect control of Vale, during the term of the Contract, is excluded from the possibility of early expiration by default.
Nature and reasons for the operation / other relevant information	Applicable interest rate: TJLP+1.46% per year This is financing for supplementation of resources relative to installation of the (UHE) Estreito Hydroelectric Power Plant.
Name of related party	Banco Nacional de Desenvolvimento Econômico e Social - BNDES
Date of transaction	6/30/2010
Amount (R$)	R$ 135,127,397.00

Table of Contents

Current balance (R$)	R$ 65,930,216.23
Amount of related party	Not applicable
Duration	7/15/2020
Loan or other type of debt	YES
Interest rate	4.500000%
Relationship with the Issuer	Indirect controlling shareholder
Purpose of the contract	Financing to purchase national machinery and equipment for Project Pier IV, and for installation of a simple mobile waste material crushing, transportation and deposit system located in at the Carajás Complex, in Parauapebas (PA).
If issuer is Creditor or Debtor	Debtor
Guaranties and insurance	None
Conditions of termination or expiration	Early maturity:

cases provided for in articles 333 and 1425 of the Civil Code or non- compliance with articles 39 and 40 in the Terms Applicable to BNDES Contracts ; b) false Statement or document signed or provided by Vale; c) collection of deed which remains uncured for over 60 days and that materially affects Vale s capacity to pay for the Contract, start judicial or extrajudicial recovery, or requests bankruptcy or is declared bankrupt; d) change in Vale s indirect shareholding control, without prior authorization by the BNDES, during the term of the Agreement, and Vale does not submit, within two months from said change, letters of guaranty issued according to BNDES model, to be provided by financial institutions that are in social and economic situations that is deemed to be solvent, and the guarantors shall be bound as solidary debtors and principal payers of obligations in the Agreement, until final payment, expressly waiving the benefits in articles 366,827 and 838 in the Civil Code, and any change to term or amount of guarantee, is subject to prior authorization by guarantors; d.1 for purposes of the terms in item d, change in Vale s indirect shareholding control means change that represents the entrance of a new shareholder in Valepar s shareholding structure, with interest higher than 20%; e) Vale interrupt its activities; f) Vale fail to comply with terms in the Agreement; g) existence of final decision for engagement in acts classified as non-compliance with children s labor and slavery legislation, or environmental crime, unless the imposed repair is complied with or while the penalty imposed to Vale is being complied with. Eventual early redemption may be declared within 60 days from notification to Vale; h) inclusion in the bylaws, statute or contract of Vale of a provision by which a special *quorum* is required for deliberation or approval of matters limiting or restricting its controlling shareholders, or even the inclusion therein, of conditions leading to: h.1) restrictions on Vale s ability to grow or its technological development; h.2) restrictions on Vale s access to new markets; or h.3) restrictions or loss of ability to pay financial obligations resulting from this operation; i) if there is any change to Vale s personnel with no training program aiming to offer work opportunities in the area and/or relocation program for workers in other companies; i) not maintain during the term of the contract, the following rates: (i) Adjusted EBITDA debt ratio less than or equal to 4.5 (provided only that regarding calculations to be made based on financial results for fiscal years 2015 and 2016, the 5.5 rate shall prevail), and (ii) Adjusted EBITDA ratio of Interest Expense greater than or equal to 2.0. And in case of non-compliance with these rates, fail to establish, within 60 (sixty) days from the date of receipt of written notice, guaranties in amount corresponding to, at least, 130% of the debt value; k) installing as a Federal Deputy or Senator or any person remunerated by Vale, or any owner, controller or director of Vale, or any person listed in the prohibitions provided by the Federal Constitution, article 54, I and II, when there will be immediate termination of disbursements. There will be no impact on charges of default, provided that the debt payment occurs within five (5) business days as of the date of installing, under risk of, if in default, assuming all charges related to the assumptions set forth above for early expiration by default.

605

Table of Contents

	In case of using the funds granted for purposes other than the one defined in the agreement, there should be early maturity and immediate termination of any disbursement and Vale will be subject, on the day following judicial or extrajudicial notice, to a 50% fine on the value released and not proved, added with appropriate fees.
Nature and reasons for the operation / other relevant information	Available interest rate: 4.50% per year fixed in reais This is financing to purchase national machinery and equipment for Project Pier IV, and for installation of a simple mobile waste material crushing, transportation and deposit system located at the Carajás Complex, in Parauapebas (PA).
Name of related party	Banco Nacional de Desenvolvimento Econômico e Social - BNDES
Date of transaction	3/31/1997
Amount (R$)	Not applicable
Current balance (R$)	Not applicable
Amount of related party	Not applicable
Duration	Undetermined. Until full execution of its purpose. Contract was changed and consolidated on 06/28/2007.
Loan or other type of debt	No
Interest rate	-
Relationship with the Company	Indirect controlling shareholder
Purpose of the contract	Regulate the relationship between Vale and BNDES to determine mineral rights for deposits which existence, size and economic validity are undefined in the Carajás mineral province, there being, therefore, no record of the asset s worth when privatized. The Contract stipulates bilateral rules with the purpose of regulating: survey tasks by Vale; the cases and manner for BNDES to provide financial resources to Vale for reimbursement of additional expenses resulting from survey tasks and payment of the respective administration fee; BNDES participatory rights; abandonment or assignment of exploratory targets or mining rights to third parties; payment of the finder s fee owed by BNDES to Vale.
If issuer is Creditor or Debtor	Not applicable
Guaranties and insurance	Not applicable
Conditions of termination or expiration	Not applicable
Nature and reasons for the operation / other relevant information	-
Name of related party	Banco Nacional de Desenvolvimento Econômico e Social - BNDES
Date of transaction	3/25/2011
Amount (R$)	R$ 102,536,220.00
Current balance (R$)	R$ 78,308,955.89
Amount of related party	Not applicable
Duration	4/15/2021
Loan or other type of debt	Yes
Interest rate	5.50000%
Relationship with the Company	Indirect controlling shareholder
Purpose of the contract	Funding for the acquisition of Handling and Transportation System, named 5ª Linha de Embarque to be installed at Terminal Marítimo Ponta da Madeira in São Luís (MA) to serve Pier IV project
If issuer is Creditor or Debtor	Debtor
Guaranties and insurance	None
Conditions of termination or expiration	BNDES may terminate this contract in advance, with the enforceability of the debt and immediate suspension of any disbursement, if in addition to the cases set forth

Table of Contents

in Articles 39 and 40 of PROVISIONS APPLICABLE TO BNDES CONTRACTS, the following are certified by BNDES:

a) reducing Vale s staff without offering training programs and/or replacement programs for workers in other companies;

b) existence of final decision condemning the Beneficiary for engagement in acts classified as environmental crimes or non-compliance with children s labor and slavery legislation, under the terms below.

c) inclusion in the bylaws, statute or contract of Vale or of the other controlling companies, of a provision by which a special *quorum* is required for deliberation or approval of matters limiting or restricting its controlling shareholders, or even the inclusion therein, of conditions leading to:

i) restrictions on Vale s ability to grow or its technological development;

ii) restrictions on Vale s access to new markets, or

iii) restrictions or loss of ability to pay financial obligations resulting from this operation;

d) if required levels are not met within 60 days from the date of written notification by BNDES, not provide actual guarantees, accepted by BNDES, in value corresponding to at least 130% of the debt, except when in such period, levels described below are met:

• Adjusted EBITDA debt ratio less than or equal to 4.5 (provided only that regarding calculations to be made based on financial results for fiscal years 2015 and 2016, the 5.5 rate shall prevail), and

• Adjusted EBITDA ratio of Interest Expense greater than or equal to 2.0.

	In case proceeds granted under this Contract are used for any purpose other than general investments for purchase of machinery and equipment, BNDES, without prejudice to the terms set forth above in this clause, will inform the Federal Public Prosecutor, pursuant to the terms of Law No. 7492 of 06.16.86.
	This contract will also expire, with the enforceability of the debt and immediate suspension of any disbursement, at the date of installing as a Federal Deputy or Senator or any person remunerated by Vale, or any owner, controller or director of Vale, or any person listed in the prohibitions provided by the Federal Constitution, article 54, paragraphs I and II. There will be no impact on charges of default, provided that the debt payment occurs within five (5) business days as of the date of installing, under risk of, if in default, assuming all charges related to the assumptions set forth above for early expiration by default.
	Early termination based on the terms in item b above will not be in effect upon appropriate repair or during compliance with penalty imposed to the Beneficiary, according to due legal process.
	In case of any of the circumstances provided for in b , under the terms above, the BNDES may only be entitled to represent early termination of the debt upon sixty (60) day prior written notice to the Beneficiary.
Nature and reasons for the operation / other relevant information	Available rate of interest: 5.5 % per year fixed in reais Funding for the acquisition of Handling and Transportation System, named 5ª Linha de Embarque to be installed at Terminal Marítimo Ponta da Madeira in São Luís (MA) to serve Pier IV project
Name of related party	Banco Nacional de Desenvolvimento Econômico e Social - BNDES
Date of transaction	6/30/2011
Amount (R$)	R$ 175,882,585.50
Current balance (R$)	R$ 115,386,727.86
Amount of related party	Not applicable
Duration	7/15/2020
Loan or other type of debt	Yes
Interest rate	4.50000%

Table of Contents

Relationship with the Company	Indirect controlling shareholder
Purpose of the contract	Funding for the acquisition of 2,558 railroad wagons to transport iron ore
If issuer is Creditor or Debtor	Debtor
Guaranties and insurance	None
Conditions of termination or expiration	Early maturity, regardless of judicial or extrajudicial notification: a) non-compliance with Vale obligations; b) application of funds from funding operations in purposes other than the one specified in the agreement.

c) inclusion in the bylaws, or statutes of Vale of a special *quorum* for approval of matters limiting its controlling shareholders, or inclusion of conditions leading to: 1) restrictions on Vale s ability to grow or its technological development;

2) restrictions on Vale s access to new markets, or 3) restrictions or loss of ability to pay financial obligations resulting from this operation; d) if there is any change to Vale s personnel with no training program aiming to offer work opportunities in the area and/or relocation program for workers in other companies; e) existence of final decision for engagement in acts classified as non-compliance with children s labor and slavery legislation, or environmental crime, and: 1) there will not be early maturity if there is repair or while the penalty imposed to Vale is being complied with; 2) early maturity will be determined only upon notice to Vale, sixty days in advance; ; f) installing as a Federal Deputy or Senator or any person remunerated by Vale, or any owner, controller or director of Vale, or any person listed in the prohibitions provided by the Federal Constitution, article 54, paragraphs I and II. There will be no impact on charges of default, provided that the debt payment occurs within five (5) business days as of the date of installing, under risk of, if in default, assuming all charges related to the assumptions set forth above for early expiration by default; g) any of the cases provided for in articles 333 and 1425 of the Civil Code or non- compliance with articles 39 and 40 in the Terms Applicable to BNDES Contracts ; h) false Statement or document signed or provided by Vale; i)

collection of deed which remains uncured for over 60 days and that materially affects Vale s capacity to pay for the Contract, start judicial or extrajudicial recovery, or requests bankruptcy or is declared bankrupt; j) Vale s incorporation, merger or acquisition, unless: 1) the resulting company is Vale; 2) the resulting company maintains the financial rates described below; k) interruption of Vale s activities; l) pledge, attachment, seizure, in bankruptcy process, or any other judicial or administrative measure, of assets object of financial collaboration; m) non-compliance with any of the terms in the agreement

Financial ratios to be complied with by Vale:

• rate: Adjusted EBITDA debt ratio less than or equal to 4.5 (provided only that regarding calculations to be made based on financial results for fiscal years 2015 and 2016, the 5.5 rate shall prevail), and

	• rate: Adjusted EBITDA ratio of Interest Expense greater than or equal to 2.0. In case these ratios are not observed, guarantees an amount equivalent to at least 130% of the debt, as stipulated by BNDES, and within 60 days from the date of written communication. The article 39, I, in the Terms Applicable to BNDES Contracts should be interpreted in a restrictive fashion, being applicable solely to eventual default of Vale obligations under this Agreement.
Nature and reasons for the operation / other relevant information	Available rate of interest: 4.5% per year fixed in reais
Name of related party	BNDES Participações S.A. BNDESPAR
Date of transaction	12/17//2007
Amount (R$)	R$ 1,407,420,000.00
Current balance (R$)	R$ 1,449,930,374.41
Amount of related party	Not applicable
Duration	12/17/2027
Loan or other type of debt	Yes

Table of Contents

Interest rate	0.8%
Relationship with the Issuer	Indirect Controlling shareholder
Purpose of the contract	Private issuances of debentures for financing of the expansion project of the Norte-Sul Railroad FNS. There have been three issuance of debentures: 12/17/2007 (1st issuance), 10/15/2009 (2nd issuance) and 6/9/2011 (3rd issuance). The amount informed above corresponds to the sum of the amount of all three issuances.
If issuer is Creditor or Debtor	Debtor
Guaranties and insurance	None
Nature and reasons for the operation / other relevant Information	Operation aims funding the expansion project of Ferrovia Norte Sul. Applicable interest rate is: TJLP + 0.8% per annum VALE and BNDESPAR have executed on June 23, 2015 an amendment to the deeds of these issuances, excluding (i) the possibility to exchange Debentures for shares issued by VLI, and the entirety of obligations of VLI and FNS from these deeds, granting, free of charge, to BNDESPAR purchase options of a specific number of common shares issued by VLI held by Vale.

Name of related party	BNDES Participações S.A. BNDESPAR
Date of transaction	6/23/2015
Amount (R$)	0.00
Current balance (R$)	Not applicable
Amount of related party	Not applicable
Duration	12/15/2027
Loan or other type of debt	No
Interest rate	
Relationship with the Issuer	Indirect controller
Purpose of the contract	Contract for Purchase of Shares issued by VLI S.A. (Contrato) held by Vale S.A. executed with BNDESPAR. Under this contract, granted to BNDES 140,239 buyout options of shares of VLI S.A., which may be exercised starting on December 18, 2017 until December 15, 2027. This contract arises out of understanding between VALE and BNDESPAR which resulted in the execution on June 23, 2015 of amendment to the deed of the Private Issuance of Debentures to fund the project to expand Ferrovia Norte Sul - FNS. Under this amendment, there has been exclusion of (i) (i) the possibility to exchange Debentures for shares issued by VLI, and the entirety of obligations of VLI and FNS from these deeds, granting, free of charge, to BNDESPAR purchase options of a specific number of common shares issued by VLI held by Vale
If issuer is Creditor or Debtor	Not applicable
Guaranties and insurance	None.
Conditions of termination or expiration	In case of non-compliance with any financial or non-financial obligation assumed by Vale, VLI or FNS in the Contract, the terms in articles 39 to 47-A in Terms Applicable to BNDES Contracts should apply.
Nature and reasons for the operation / other relevant Information	

Name of related party	Banco Bradesco S.A.
Date of transaction	6/30/2010
Amount (R$)	R$ 135,127,397.00
Current balance (R$)	R$ 65,933,086.20

Table of Contents

Amount of related party	Not applicable
Duration	7/15/2020
Loan or any other type of debt	YES
Interest rate	4.50000%
Relationship with the Company	Bradespar SA, indirect controlling shareholder of Vale, and Banco Bradesco S.A. are under common control.
Purpose of the contract	Funding for the acquisition of national machinery and equipment to be used in Pier IV Project and deployment of a Mobile Cracking System, Transport and Sterile Disposal (SME).
If issuer is Creditor or Debtor	Debtor
Guaranties and insurance	None
Conditions of termination or expiration	Early maturity:

cases provided for in articles 333 and 1425 of the Civil Code or non- compliance with articles 39 and 40 in the Terms Applicable to BNDES Contracts ; b) false Statement or document signed or provided by Vale; c) collection of deed which remains uncured for over 60 days and that materially affects Vale s capacity to pay for the Contract, start judicial or extrajudicial recovery, or requests bankruptcy or is declared bankrupt; d) change in Vale s indirect shareholding control, without prior authorization by the BNDES, during the term of the Agreement, and Vale does not submit, within two months from said change, letters of guaranty issued according to BNDES model, to be provided by financial institutions that are in social and economic situations that is deemed to be solvent, and the guarantors shall be bound as solidary debtors and principal payers of obligations in the Agreement, until final payment, expressly waiving the benefits in articles 366,827 and 838 in the Civil Code, and any change to term or amount of guarantee, is subject to prior authorization by guarantors; d.1 for purposes of the terms in item d, change in Vale s indirect shareholding control means change that represents the entrance of a new shareholder in Valepar s shareholding structure, with interest higher than 20%; e) Vale interrupt its activities; f) Vale fail to comply with terms in the Agreement; g) existence of final decision for engagement in acts classified as non-compliance with children s labor and slavery legislation, or environmental crime, unless the imposed repair is complied with or while the penalty imposed to Vale is being complied with. Eventual early redemption may be declared within 60 days from notification to Vale; h) inclusion in the bylaws, statute or contract of Vale of a provision by which a special *quorum* is required for deliberation or approval of matters limiting or restricting its controlling shareholders, or even the inclusion therein, of conditions leading to: h.1) restrictions on Vale s ability to grow or its technological development; h.2) restrictions on Vale s access to new markets; or h.3) restrictions or loss of ability to pay financial obligations resulting from this operation; i) if there is any change to Vale s personnel with no training program aiming to offer work opportunities in the area and/or relocation program for workers in other companies; j) not maintain during the term of the contract, the following rates: (i) Adjusted EBITDA debt ratio less than or equal to 4.5 (provided only that regarding calculations to be made based on financial results for fiscal years 2015 and 2016, the 5.5 rate shall prevail), and (ii) Adjusted EBITDA ratio of Interest Expense greater than or equal to 2.0. And in case of non-compliance with these rates, fail to establish, within 60 (sixty) days from the date of receipt of written notice, guaranties in amount corresponding to, at least, 130% of the debt value; k) installing as a Federal Deputy or Senator or any person remunerated by Vale, or any owner, controller or director of Vale, or any person listed in the prohibitions provided by the Federal Constitution, article 54, paragraphs I and II. There will be no impact on charges of default, provided that the debt payment occurs within five (5) business days as of the date of installing, under risk of, if in default, assuming all charges related to the assumptions set forth above for early expiration by default. In case of using the funds granted for purposes other than the one defined in the agreement, there should be early maturity and immediate termination of any disbursement and

610

Table of Contents

	Vale will be subject, on the day following judicial or extrajudicial notice, to a 50% fine on the value released and not proved, added with appropriate fees.
Nature and reasons for the operation / other relevant information	None Available interest rate: 4.5 % per year fixed in reais
Name of related party	Banco Bradesco S.A., succeeded by CIBRASEC Companhia Brasileira de Securitização
Date of transaction	3/24/2015
Amount (R$)	R$ 700,000,000.00
Current balance (R$)	R$ 754,261,365.92
Amount of related party	Not applicable
Duration	4/20/2022
Loan or any other debt	YES
Interest rate	8.8%
Relationship with the Company	Bradespar S.A., Vale indirect controlling shareholder, and Banco Bradesco S.A. are under common control
Purpose of the contract	CCB used as support for CRI, to fund projects under S11D Logística, at Complexo Portuário de Ponta Madeira
If issuer is Creditor or Debtor	Debtor
Guaranties and insurance	Sale of 0.0623% (94,319.31 m²) of the property under registry 13.521 at Cartório de Registro de Imóveis da Comarca de Itabira/MG Endorsement by Docepar S.A.
Conditions of termination or expiration	EARLY MATURITY a) non-payment by issuer for two (2) Working Days upon the date when the amount is payable of the Principal, of the Compensation or Mandatory Anticipated Liquidation; b) non-compliance with any pecuniary obligation that is not mentioned in item a above within 15 (fifteen) days following the date when the amount is payable; c) non-compliance by the Issuer of any pecuniary, principal or ancillary, amount, assumed in this Sale Contract, that is not solved within sixty (60) days from the date of non-compliance (should no other cure term is set forth and specifically provided), provided that the non-compliance causes relevant Adverse Effect; d) should the Sale become effective or its effects are extinct or materially limited prior to the full payment of obligations arising out of this Term, whether due to being void, annulled, terminated, denounced, distract, or any other reason attributable solely to the Issuer, or should the sale become illegal and/or insufficient to ensure payment of obligations hereunder and provided that the Sale is not replaced, reinforced or complemented as provided for in the Contract; e) should the Issuer or the Endorser engages or perpetrates any acts or judicial or extrajudicial measures that aim to annul, question, review, cancel, repudiate, suspend, or invalidate the Endorsement and/or any of the obligations of the Endorser hereunder, as the case may be; f) statement of early maturity regarding Issuer obligations arising out any contract or term that is subject to, with evidence of outstanding financing, in local or international market, in amount that is equal or higher than R$ 250,000,000.00 (two hundred and fifty million reais) jointly or severally, adjusted annually from the Date of Disbursement, according to positive changes to the General Market Price Index published by Fundação Getúlio Vargas (IGPM), or equivalent in other currencies, provided that it is recognized judicially or not contested/defended by the Issuer; g) liquidation, dissolution or extinction of the Issuer; h) (h.1) bankruptcy of the Issuer; (h.2) file for bankruptcy by the Issuer; (h.3) request of Issuer bankruptcy filed by third parties, that is not justified

under the legal term; or (h.4) file for judicial or extrajudicial recovery by the Issuer; i) change to the corporate purpose of the Issuer, as set forth in the by-laws in effect on the Disbursement Date, provided that as result the Issuer is no longer engaged in mining activities; and j) evidence that any information given by the Issuer hereunder is false or incorrect in any relevant aspect.

Table of Contents

	OPTIONAL EARLY REDEMPTION The Bill may be redeemed early after three (3) years from the Issuing Date, according to the adjusted debt balance of the Bill, under the following circumstances: (i) prior thirty (30) day notice to the Creditor; (ii) payment of a premium equal to 2% (two per cent) over the Optional Early Redemption value, and the Optional Early Redemption value should correspond to the debt balance of the Principal, adjusted by Compensation, calculated pro rata temporis, from the Disbursement Date or the Last Adjustment Date (as defined below), as the case may be, until the effective Optional Early Redemption.
Nature and reasons for the operation / other relevant information	The applicable interest rate is TR + 8,8 % per annum in reais Financing for civil works in logistic projects in Complexo Portuário de Ponta Madeira. Contract assigned on the issuing date to CIBRASEC Companhia Brasileira de Securitização.
Name of related party	Banco Bradesco Cartões S.A. and Banco Bankpar S.A.
Date of transaction	12/19/2013
Amount (R$)	R$ 2,079,396,954.10
Current balance (R$)	R$ 1,720,826,002.65
Amount of related party	Not applicable
Duration	12/31/2018
Loan or any other debt	No
Interest rate	0
Relationship with the Company	Bradespar S.A., Vale indirect controlling shareholder, and Banco Bradesco S.A. are under common control.
Purpose of the contract	Service to issue and manage corporate credit cards to be used in Brazil and abroad. The payment of this contract is according to consumption (on demand), there is no use commitment/obligation assumed by Vale.
If issuer is Creditor or Debtor	Debtor
Guaranties and insurance	Not applicable
Conditions of termination or expiration	The Agreement may be terminated at any time and by either Party by written notice with at least one hundred eighty (180) days in advance, with no right to claim, indemnity, or compensation, for the benefit of the Party receiving the termination notice. Additionally to circumstances provided for in the law, the Agreement may be terminated immediately and with no prior notice, under the following circumstances: **a)- if either Party files for bankruptcy, judicial or extrajudicial recovery, is subject to a claim of bankruptcy or liquidation; and** b)- if permits granted to Suppliers to provide/perform contracted services are revoked. Without prejudice to other conditions applicable to the termination and fine payment, when applicable, the Agreement may be terminated, upon prior notice at least sixty (60) days in advance, under the following circumstances:

a) payment delays for over sixty (60) days;

b) delay to make available information that prejudice regular compliance with obligations assumed in the Agreement, that fails to be solved within thirty (30) days after receipt of the notice by the other Party in this sense; and

c) breach of any of the obligations in this Agreement by the Parties, that results directly in impediment for regular compliance with obligations assumed in the Agreement, that fails to be solved within thirty (30) days after receipt of the notice by Suppliers the other Party in this sense.

The agreement is only in effect after 1/1/2014.

Table of Contents

Nature and reasons for the operation / other relevant information	
Name of related party	CBSS - Companhia Brasileira de Soluções e Serviços
Date of transaction	1/16/2014
Amount (R$)	R$ 2,711,977,547.43
Current balance (R$)	R$ 1,667,457,804.42
Amount of related party	Not applicable
Duration	12/31/2019
Loan or any other debt	NO
Interest rate	-0
Relationship with the Company	CBSS is a company controlled by Banco Bradesco S.A. Bradespar S.A., indirect controlling shareholder of Vale, and Banco Bradesco S.A. are under common control.
Purpose of the contract	Provision of issuance and management of legitimation documents known as refeição-convênio and/or alimentação-convênio (meal voucher and food voucher), Card to purchase Christmas basket and Culture Card and credit cards with pre-defined limit, as magnetic or chip cards, according to the available technology, hereinafter severally referred to, regardless of the type, as ALELO CARD(S) , by SUPPLIER to VALE (SERVICES) in Brazil, as well as availability, in such Cards, of the respective benefits, according to amounts in real predetermined by Vale. The payment of this contract is according to consumption (on demand), there is no use commitment/obligation assumed by Vale.
If issuer is Creditor or Debtor	Debtor
Guaranties and insurance	None
Conditions of termination or expiration	In case of unreasoned termination of the Agreement by Vale prior to the termination of the minimum five (5) year effective period, Vale will owe to Supplier, fine to be calculated as follows: i. up to 12 months: fine equivalent to 75% of the accrued value for commercial discount granted to Vale ii. 13th to 24th month: fine equivalent to 50% of the accrued value for commercial discount granted to Vale iii. 25th to 36th month: fine equivalent to 30% of the accrued value for commercial discount granted to Vale iv. 37th to 48th month: fine equivalent to 10% of the accrued value for commercial discount granted to Vale v. starting on the 49th month: exempted Without prejudice to the satisfaction of other rights, Supplier may terminate this agreement with no reason prior to the effectiveness set forth in Clause 4.1 in the Agreement by means of 12 month prior notice, with no right to claims, indemnity, or

compensation of benefits by VALE. If Supplier fails to comply with conditions set forth herein, it will be subject to a R$ 1,000,000,000.00 fine.

Without prejudice to the satisfaction of other rights, either Party may terminate this Agreement by means of written notice to the other Party, with no right to claims, indemnity, or compensation for the benefit of the Party receiving the termination notice, under the following circumstances:

(i) request of claim of bankruptcy, dissolution, liquidation, or judicial or extrajudicial recovery of the other Party;

(ii) under the terms in Clause Twelve in the Agreement, in case of act of God or force majeure duly evidenced, that prevents performance of the object of the Agreement for more than thirty (30) days or, if evidenced, as being able to

Table of Contents

	delay for undetermined time compliance with the Agreement, either party may choose to terminate, upon compliance with reciprocals outstanding obligations, to the date of the impediment; iii) breach of any provision of the instrument or the laws and regulations under which it is subject to, if not remedied within thirty (30) days from the date of notification receipt sent by the non-defaulting party to the infringing party, or within a time as agreed by the parties at the time; iv) By Vale, if the Supplier fails to comply with the terms in the Vendors Code of Behavior, when applicable, and fail to share principles and values in Vale s Sustainable Development Policy and Human Rights Policy, which documents are part of this agreement; (v) in case of proven fraud or willingness by the infringing Party. In case of termination motivated by either Party, under item (iii) above, the Party giving cause to it will not be subject to the payment of fine for whatever title, without prejudice to satisfying the other Parties rights. In the event of termination of the Contract for any reason, ALELO CARDS following Meal, Food, and Christmas models, delivered to Vale and the respective current balances of benefits, will be valid for use during the period of the card equal to ninety (90) calendar days after the effective termination of the Agreement and, after that period, the ALELO CARDS will automatically be canceled, and any respective benefits will be returned to Vale within sixty days. Additionally, balances available in the ALELO CARDS in the Culture Card model will undetermined validity. The agreement is only in effect after 1/1/2014.
Nature and reasons for the operation / other relevant information	
Name of related party	CBSS - Companhia Brasileira de Soluções e Serviços
Transaction Date	07/28/2014
Amount (R$)	R$ 52,868,847.14
Current balance (R$)	R$ 46,972,036.19
Amount of related party	Not applicable
Duration	07/27/2019
Loan or other type of debt	NO
Interest rate	0
Relationship with the Company	CBSS is a company controlled by Banco Bradesco S.A. Bradespar S.A., indirect controlling shareholder of Vale, and Banco Bradesco S.A. are under common control.
Purpose of the contract	Issuing, management, and distribution of transportation voucher to be used by employees of Vale and the group in Brazil The payment of this contract is according to consumption (on demand), there is no use commitment/obligation assumed by Vale.
If issuer is Creditor or Debtor	Debtor
Guaranties and insurance	None

Conditions of termination or expiration	The agreement may be terminated by either party, by means of formal notice at least 120 (one hundred and twenty) days in advance of the estimated date of early termination. In this case, neither party is entitled to indemnity or compensation, except for obligations of the parties regarding performance of services and payment for services provided until termination of the agreement. If either party fails to comply with the 120 (one hundred and twenty) days term set forth in the agreement, this party will be subject to the payment of fine of R$ 90,000.00. The contract is for R$ 52,868,847.14 related to all companies of Vale Group, and from that amount, R$ 47,550,484.77 refer to Vale.

Table of Contents

Nature and reasons for the operation / other relevant information	
Name of related party	Ferrovia Centro Atlântica S.A.
Transaction Date	12/30/2002
Amount (R$)	R$ 25,804,722.59
Current balance (R$)	R$ 15,813,263.56
Amount of related party	Not applicable
Duration	12/31/2017
Loan or other type of debt	No
Interest rate	0.00000
Relationship with the Company	Related Party
Purpose of the contract	Cargo railroad transportation service provision
If issuer is Creditor or Debtor	Creditor
Guaranties and insurance	Take or Pay for annual contracted volumes.
Conditions of termination or expiration	The Contract may be terminated, regardless of warning, judicial or extrajudicial notice, under the following circumstances: a) bankruptcy and composition with creditors, judicial or extrajudicial dissolution of either party; b) Suspension/revocation of the concession to the SUPPLIER, at any time, to explore the cargo railroad public transportation services; c) non-compliance with any of the conditions and/or obligations set forth in the contract, when the infringing or non-compliant party fails to solve or fully comply with within thirty (30) days upon the notice by the compliant party, to be preceded by written notice.
Nature and reasons for the operation / other relevant information	
Name of related party	Ferrovia Centro Atlântica S.A.
Transaction Date	1/1/2015
Amount (R$)	R$ 20,880,000.00
Current balance (R$)	R$ 19,642,130.40
Amount of related party	Not applicable
Duration	By the end of the concession of any of the railroads
Loan or other type of debt	NO
Interest rate	0
Relationship with the Company	Subsidiary
Purpose of the contract	Agreement for Mutual Operating Use of Railroad Facilities, as Mutual Traffic Model and exchange of material between the parties.
If issuer is Creditor or Debtor	FCA Debtor EFVM Debtor and Creditor
Guaranties and insurance	Not applicable

Conditions of termination or expiration	The Operational Contract may be terminated by either Party, by means of written notice to the other Party, and the Party that have been requested termination shall not be entitled to any claim, indemnity or compensation, because of termination, under the following circumstances:

Table of Contents

Nature and reasons for the operation / other relevant information	(i) non-compliance by the other Party with any obligation provided for in the Operational Contract, except when the non-compliant Party solves the non-compliance within ninety (90) calendar days upon receipt of the written notice sent by the Compliant Party; (ii) files for insolvency, bankruptcy or judicial or extrajudicial recovery of the other Party; and (iii) government/authority fact, fact of Administration, act of God, or force majeure, that suspends performance of the Contract for over 180 (one hundred and eighty) calendar days or in case of early termination of concession contracts of EFVM or FCA.
Name of related party	Vale S.A., VLI Multimodal S.A., FCA S.A. e FNS S.A.
Date of transaction	8/9/2013
Amount (R$)	0.00
Current balance (R$)	Not applicable
Amount of related party	Not applicable
Duration	07/29/2027
Loan or other type of debt	NO
Rate of interest	0.000000
Relationship with the Company	Subsidiary
Purpose of the contract	Buy-out option subject to future event: Vale S.A will pay VLI Multimodal S.A (in case of exercise of buy-out), prices determined by the residual value booked by VLI Multimodal S.A, considering maintenance and improvements, compliant with the appropriate depreciation. In case of characterization of one or more assets as revertible assets: 1- the price to be paid for the assets will be the indemnity paid by the Granting Authority to Vale S.A, safeguarding FCA and FNS, is entitled to receive a value that is not lower than the nominal value originally paid for each asset; 2- should the indemnity paid by the granting authority be lower than the price paid by Vale S.A to FCA and FNS, this should return the difference to Vale S.A., under the terms in item i above.
If issuer is Creditor or Debtor	Not applicable
Guaranties and insurance	Not applicable
Conditions of termination or expiration	No fine is provided for in case of termination

Note: Option linked to the effectiveness of the Cargo Railroad Transportation Services and Related Services Agreement entered by and between Vale S.A e VLI Multimodal S.A on 12/7/2010.

FCA and FNS are the owners of wagons and locomotives (Assets), required for the provision of services under the Transportation Agreement, reason why FCA and FNS granted the Assets to Vale, exclusively and irretrievably, for the entire effectiveness of the Transportation Agreement.

Vale may acquire part or all the Assets, upon one of the following circumstances:

Table of Contents

	a) Determination by the Granting Authority in this sense; b) Termination of Concession Agreements for any reason; c) Termination of the Transportation Agreement for any reason; d) File or order of insolvency, bankruptcy, or judicial or extrajudicial recovery for FCA and/or FNS, by VLI Multimodal; e) Non-compliance by VLI Multimodal, FCA and/or FNS with any obligation set forth in the AGREEMENT, except when it solve the non-compliance within 15 calendar days upon receipt of written notice in this sense provided by VALE; f) Existence of third-party claim, in judicial or administrative procedure, incurring on one or more Assets or creating any encumbrance, that is not cured by VLI Multimodal, FCA, and FNS in twenty days; and g) If VLI Multimodal, FCA, and FNS, for any reason, remove one or more Assets from Vale s possession, without its express written agreement by Vale and ANTT, if that is not cured by VLI Multimodal, FCA, and FNS in 20 days.
Nature and reasons for the operation / other relevant information	

Name of related party	VLI Multimodal S.A. e Vale S.A.
Date of transaction	8/9/2013
Amount (R$)	R$ 14,044,277,674.07,
Current balance (R$)	R$ 638,786,355.33
Amount of related party	Not applicable
Duration	6/29/2027
Loan or other type of debt	No
Rate of interest	0
Relationship with the Company	Subsidiary
Purpose of the contract	Providing railway transportation services
If issuer is Creditor or Debtor	Creditor
Guaranties and insurance	Contract specifies compensations for theft, loss, or damage of the goods that will be handled in a specific process and, in the case of any debt, they will be settled within 60 days after receipt of the compensation request. The price to be considered will be that declared in the fiscal note at the time of carriage.
Conditions of termination or expiration	Contract may be terminated by any party by giving written notice to the other, without there being any right of claim, indemnification or compensation for the benefit of the party receiving the notice of termination, in following cases: (i) Non-compliance of any contractual obligations by the other Party, except when non-compliance is solved within sixty (60) days after receipt of the relevant notice by the non-default party; (ii) Petition or declaration of bankruptcy or liquidation, or judicial or extrajudicial recovery by the other party; and (iii) In the event of an act of God or force majeure regularly proved, that comes to stop the execution of this Contract for more than one hundred eight (180) calendar days;

(iv) change in shareholding control, direct or indirect, of either party, under the terms in item 16.2.1 in the agreement.

There is no fixed amount determined for this service agreement. Thus, the amount related to this agreement in fiscal year ending on December 31, 2015 is R$ 638,786,355.33, while the estimated value for the agreement on the termination date on July 29, 2027, carried to today s value is R$ 14,044,277,674.07

Nature and reasons for the operation / other relevant information

Table of Contents

Name of related party	Ferrovia Norte Sul S.A.(through Estrada de Ferro Carajás EFC)
Date of transaction	01/01/2015
Amount (R$)	R$ 1,202,131,584.18
Current balance (R$)	R$ 46,216,149.72
Amount of related party	None
Duration	By the end of the concession of any of the railroads
Loan or other type of debt	No
Rate of interest	0
Relationship with the Company	Subsidiary
Purpose of the contract	Specific Contractual Transaction, with the objective (i) to carry out specific transactions relating to mutual traffic and/or the right of passage; (ii) to refine global operational efficiency for railroad transportation and better conditions in general for passengers, in order to allow for increased railroad transportation between parties; (iii) to maintain a heightened relationship between parties, in order to increase service of the demands of transportation of cargo in its areas of influence, producing economic development in the regions it attends, all in accordance with our contracts, as well as in observance of the applicable technical norms and regulations; and (iv) to consider the junction between the two railroads and the Açailândia station, in the State of Maranhão, operated by Vale S.A., where we will make the exchange between railroad stations with dispatched cargo in mutual traffic.
If issuer is Creditor or Debtor	Vale (EFC) creditor and debtor FNS creditor and debtor
Guaranties and insurance	None
Conditions of termination or expiration	This Contract may be terminated by either party by giving notice, communication or judicial summons or extrajudicial communication within 30 (thirty) days, only in the event of non-compliance by either Party with any clause, provided it is not remedied within 90 (ninety) days by the non-complying Party, after receiving prior written notice identifying the non-compliance, with acknowledgement of receipt. In case of termination, the Parties will proceed according to current laws.
Nature and reasons for the operation / other relevant information	-

Name of related party	ThyssenKrupp CSA Siderúrgica do Atlântico Ltda
Date of transaction	11/24/2006 (date of signature of the contract)
Amount (R$)	19,088,136,756.40
Current balance (R$)	17,298,697,432.80
Amount of related party	Not applicable
Duration	04/01/2009 to 12/31/2029
Loan or other type of debt	NO 0.000000
Relationship with the Company	Shareholder
Purpose of the contract	Purchase and sale of ore The Contract sets forth the annual amounts to be provided and prices vary during the contract term, as they are defined and impacted by market conditions and pricing specificities agreed upon with the client.
If issuer is Creditor or Debtor	Creditor
Guaranties and insurance	Not applicable
Conditions of termination or expiration	The agreement will be extended for consecutive fifteen (15) year period, unless terminated in writing by either party, three (3) years in advance to the termination date, no earlier than March 31, 2021.
Nature and reasons for the operation / other relevant Information	

Name of related party	Baovale Mineração S.A.

Table of Contents

Date of transaction	10/10/2001
Amount (R$)	R$ 687,656,816.00
Current balance (R$)	R$ 160,178,250.88
Amount of related party	Not applicable
Duration	20 years (by 10/18/2021)
Loan or other type of debt	No
Interest Rate	0
Relationship with the Company	Subsidiary, joint control
Purpose of the contract	Leasing
If issuer is Creditor or Debtor	Debtor
Guaranties and insurance	None
Conditions of termination or expiration	

The contract may be terminated:

- due to act of God or force majeure under the terms in article 1058 and sole paragraph in the Civil Code;
- upon mutual agreement;
- upon termination by either party due to non-compliance by the other party;
- due to bankruptcy or composition with creditors by either party.

Nature and reasons for the operation / other relevant Information

Name of related party	Companhia Hispano Brasileira de Pelotização - Hispanobrás
Date of transaction	5/16/2012
Amount (R$)	R$ 176,670,990.62
Current balance (R$)	R$ 148,147,962.01
Amount of related party	Not applicable
Duration	Three years with automatic renewal
Loan or other type of debt	No
Interest rate	0.0000
Relationship with the Company	Affiliate
Purpose of the contract	Asset leasing contract. Vale leased Hispanobrás pellet plant for one fixed payment plus another payment variable with assets performance. Agreement term is for 3 years, successively renewable for the same period. Lease of industrial assets is part of the new business model chosen by the shareholders as it allows enjoying synergies and reducing non-efficiencies, ensuring better profitability and return to shareholders.
If issuer is Creditor or Debtor	Debtor
Guaranties and insurance	None
Conditions of termination or expiration	Any of the parties may choose to terminate the Lease after the first three years, as

	long as the other party receives a written notice one year before the end of the referred period.
Nature and reasons for the operation / other relevant Information	

Name of related party	Companhia Nipo-Brasileira de Pelotização Nibrasco
Date of transaction	4/30/2008
Amount (R$)	R$ 44,105,631.25
Current balance (R$)	R$ 27,382,741.24
Amount of related party	Not applicable
Duration	Three years with automatic renewal

Table of Contents

Loan or other type of debt	NO
Interest rate	0.00000
Relationship with the Company	Affiliate
Purpose of the contract	Contract for leasing assets. Vale leased 2 pellet plants of Nibrasco, upon payment of a fixed portion and variable portion depending on the performance of the assets. Contract term is for 3 years, renewable successively for the same period. Lease of industrial assets is part of the new business model chosen by the shareholders as it allows enjoying synergies and reducing non-efficiencies, ensuring better profitability and return to shareholders.
If issuer is Creditor or Debtor	Debtor
Guaranties and insurance	None
Conditions of termination or expiration	Either party will have the right to terminate the lease after the initial period of three years, provided that they send to the other party written notice at least a year before the lease expires.
Nature and reasons for the operation / other relevant Information	

Name of related party	Companhia Italo-Brasileira de Pelotização - Itabrasco
Date of transaction	09/30/2008
Amount (R$)	R$ 237,813,436.07
Current balance (R$)	R$ 3,391,884.39
Amount of related party	Not applicable
Duration	By 12/31/2018
Loan or other type of debt	NO
Interest rate	0.0000
Relationship with the Company	Affiliate
Purpose of the contract	Contract for leasing assets. Vale leased the pellet plant of Itabrasco, upon payment of a fixed portion and variable portion depending on the performance of the assets.
If issuer is Creditor or Debtor	Debtor
Guaranties and insurance	None
Conditions of termination or expiration	Lease of industrial assets is part of the new business model chosen by the shareholders as it allows enjoying synergies and reducing non-efficiencies, ensuring better profitability and return to shareholders. Either party will have the right to terminate the lease after the initial period of three years, provided that they send to the other party written notice at least a year before the lease expires. The parties may also, during the eighth year, review the conditions agreed in this contract in order to decide whether or not this will be renewed.
Nature and reasons for the operation / other relevant Information	

Name of related party	VLI Multimodal S.A.
Date of transaction	7/1/2012
Amount (R$)	R$8,385,616,086.23
Current balance (R$)	R$ 7,511,590,326.63
Amount of related party	Not applicable
Duration	09/23/2039
Loan or other type of debt	NO
Rate of interest	0.0000

620

Table of Contents

Relationship with the Company	Subsidiary
Purpose of the contract	Provision of Cargo Port Transportation Services and Related Services at the Private Terminal of Mixed Use in Praia Mole, at the Terminal de Produtos Diversos and the Terminal de Graneis Líquidos. On 11/29/2013, the Parties executed the first contractual amendment in order to guarantee improvements in the contractual management and control of compliance with contractual obligations
If issuer is Creditor or Debtor	Creditor
Guaranties and insurance	Not applicable
Conditions of termination or expiration	Non-compliance by the other party with any of the contractual obligations, except if the Infringing Party fails to resolve the non-compliance within sixty (60) days upon receipt of notice by the Non-Infringing Party in this sense. If the other Party files for insolvency, bankruptcy of judicial or extrajudicial recovery; Evidence of government authority act, administration act, as defined in the contract, act of God or force majeure, that prevents performance of the Agreement for more than one hundred eight (180) days. Change in direct or indirect shareholding control of either Party; Termination Fine R$80,615,659.69.
Nature and reasons for the operation / other relevant information	Note: Provision of services by Vale to VLI Multimodal to move general cargo to allow VLI Multimodal customers to be served by port terminals, aiming for efficiency, excellency, and relationship and service improvement offered continuously, with increased volume of traffic at the terminals and consequent improvement of results.

Name of related party	Companhia Coreano Brasileira de Pelotização - Kobrasco
Date of transaction	5/06/2008
Amount (R$)	R$ 296,597,519.59
Current balance (R$)	R$ 12,405,028.08
Amount of related party	Not applicable
Duration	By 5/31/2018
Loan or other type of debt	NO
Interest rate	0.0000
Relationship with the Company	Affiliate
Purpose of the contract	Contract for leasing assets. Vale leased the Kobrasco pellet plant, upon payment of a fixed portion and variable portion depending on the performance of the assets. Term of the contract is 5 (five) years, renewable successively for an equal period.

	Lease of industrial assets is part of the new business model chosen by the shareholders as it allows enjoying synergies and reducing non-efficiencies, ensuring better profitability and return to shareholders.
Guaranties and insurance	None
Conditions of termination or expiration	Written notice to the other party at least one year in advance of its termination
Nature and reasons for the operation / other relevant Information	

Table of Contents

Name of related party	Samarco Mineração S.A.
Date of transaction	04/12/2004
Amount (US$)	US$ 3,385,594.415.42
Current balance (US$)	US$ 0.00
Amount of related party (US$)	US$ 3,385,594,415.42
Duration	20 years, effective by 12/31/2026
Loan or other type of debt	Not Applicable
Interest rate	Not Applicable
Relationship with the Company	Shareholder 50%
Purpose of the contract	Sale, by Vale, of material that is currently non-usable, as *run-of-mine* (ROM) to Samarco. The Contract sets forth the annual amounts to be provided and prices vary during the contract term, as they are defined and impacted by market conditions and pricing specificities agreed upon with the client. As of the date of this Reference Form, the contract is in effect, but balance equals to zero because of the Force Majeure due to breakage of the Samarco s dam, being impossible to estimate amounts receivable under the Contract.
If issuer is Creditor or Debtor	Creditor
Guaranties and insurance	None
Conditions of termination or expiration	In case of non-compliance for over 90 days, bankruptcy, composition with creditors, insolvency, or judicial or extrajudicial dissolution, stoppage of supplies or receipts for more than 90 days, by order of competent authority, act of God or force majeure for more than 90 days, non-compliance with any contractual clause that is not solved within 30 days.
Nature and Reasons for the operation / other Relevant Information	

Name of related party	Samarco
Date of transaction	12/31/2014
Amount (R$)	R$ 3,964,689.76
Current balance (R$)	R$ 0.00
Amount of related party	R$ 3,964,689.76
Duration	Until registration of the agreement with the Property Registrar.
Loan or other type of debt	No
Interest rate	Not applicable
Relationship with the Company	Shareholder 50%
Purpose of the contract	Usage and later sale of properties between Vale and Samarco, for purposes of ensuring feasibility of deployment of the project at Vale do Brumado. As of the date of this Reference Form, the contract is in effect, but balance equals to zero because of the Force Majeure due to breakage of the Samarco s dam, being impossible to estimate amounts receivable under the Contract.
If issuer is Creditor or Debtor	Debtor
Guaranties and insurance	Not applicable
Conditions of termination or expiration	Not applicable

Nature and Reasons for the operation / other Relevant Information

Table of Contents

Name of related party	Samarco
Date of transaction	12/30/2009
Amount (R$)	R$ 20,370,000.00
Current balance (R$)	R$ 3,908,584.79
Amount of related party	R$ 20,370,000.00
Duration	11 years, terminating on 12/21/2020 or until supply of the agreed upon volume.
Loan or other type of debt	NO
Interest rate	Not applicable
Relationship with the Company	Shareholder 50%
Purpose of the contract	Purchase and sale, in metallic mass, of ore that is not usable by either company. The Contract sets forth the annual amounts to be provided and prices vary during the contract term, as they are defined and impacted by market conditions and pricing specificities agreed upon with the client. As of the date of this Reference Form, the contract is in effect, but balance equals to zero because of the Force Majeure due to breakage of the Samarco s dam, being impossible to estimate amounts receivable under the Contract.
Guaranties and insurance	Not applicable
Conditions of termination or expiration	In case of default that remains unsolved for 60 days, extrajudicial bankruptcy, suspension of supply or receipts for over 30 days, by means of order by the competent authority.
Nature and Reasons for the operation / other Relevant Information	

Name of related party	MRS Logística S.A.
Date of transaction	01/01/2011
Amount (R$)	21,534,464,000.00
Current balance (R$)	14,582,249,314.08
Amount of related party	Not applicable
Duration	11/30/2026
Loan or other type of debt	NO
Interest rate	0.0000
Relationship with the Company	Affiliate
Purpose of the contract	Regulate the provision by MRS to VALE, of rail transportation services of iron ore loading from iron ore terminals named Terminal do Andaime, Terminal do Córrego do Feijão, Terminal Água Santa, Terminal Olhos D´Agua, Terminal Sarzedo Novo TCS (Terminal de Carga de Sarzedo), Terminal Sarzedo, Terminal Alberto Flores, Terminal Souza Noschese, Terminal de Juiz de Fora, located in the State of Minas Gerais, and certain other terminals for shipping - while transportation conditions will be agreed upon at the time to unloading terminals Guaíba, CPBS, CSA, and Patrag, the first three in the State of Rio de Janeiro and the last one in the State of Minas Gerais (Ouro Branco).

623

Table of Contents

If issuer is Creditor or Debtor	Debtor
Guaranties and insurance	During the duration of the contract, Vale will guarantee MRS the minimum payment of 80% (eighty per cent) of MRS Scheduled Annual Revenue, based on annually adjusted volumes. MRS must contract the Optional Liability Insurance for personal injury and damage caused to third parties, and is responsible for payment of the corresponding values of the policies, copies of which should be sent to Vale with the general terms of the respective insurance; the same applies for insurances and attributions under Vale responsibility.
Conditions of termination or expiration	The contract may be terminated by operation of law, by written notice to the other party, without prior notice, in any of the following cases: 1) default, by either party of any term, condition or provision of this contract, provided that the breach is not remedied within sixty (60) calendar days of the notices provided for above. 2) bankruptcy, judicial or extrajudicial recovery, dissolution or, judicial or extrajudicial liquidation, declared or approved; 3) suspension by the competent authorities of the implementation of the Services; 4) If MRS suspends the Service, in whole or in part, without express prior notice or written consent by Vale, for more than ten (10) consecutive days or 30 (thirty) alternating days; 5) Suspension of service due to the occurrence of *force majeure* or unforeseeable circumstances for a period exceeding sixty (60) days; 6) If a party assigns this contract without prior knowledge and written consent of the other party, compliant with clause eighteen.
Nature and reasons for the operation / other relevant Information	

Name of related party	Minerações Brasileiras Reunidas S.A. MBR
Date of transaction	06/01/2007
Amount (R$)	R$ 5,659,207,616.25
Current balance (R$)	R$ 46,965,892,883.97
Amount of related party	Cannot be assessed
Duration	05.31.2037
Loan or other type of debt	NO
Interest rate	0.0000
Relationship with the Company	Subsidiary
Purpose of the contract	Lease of facilities variable according to production of MBR operating units, multiplied by factor that varies according to Platts IODEX Iron Ore fines 62% Fe CFR North China (factors provided for in the lease agreement for the Platts range). The counterpart is due quarterly by Vale to MBR, and payments should be made by the 15th day following the end of the corresponding quarter, in national currency. Vale makes available to MBR reports with the production measured in the period and the method used in the measurement, as well as daily information on the value of iron

	ore in the international market to allow that MBR checks conformity of the counterpart value.
	The value in subitem Due amount refers to the value paid from September 2007 to December 2015.
If issuer is Creditor or Debtor	Debtor.
Guaranties and insurance	None

Table of Contents

Conditions of termination or expiration	Through dissolution or if the contract of usufruct of shares of Empreendimentos Brasileiros de Minerações S.A. EBM ends
Nature and reasons for the operation / other relevant Information	-

Name of related party	MRC Serviços Ferroviários CBRJ-AL Ltda.
Date of transaction	1/1/2011
Amount (R$)	14,611,085.07
Current balance (R$)	0.00
Amount of related party	Not applicable
Duration	12/31/2016
Loan or other type of debt	NO
Interest rate	0.0000
Relationship with the Company	A company member of the Mitsui group, Vale controlling group
Purpose of the contract	Lease of 300 new HPE type wagons
If issuer is Creditor or Debtor	Debtor
Guaranties and insurance	None
Conditions of termination or expiration	Provided that (i) no breach has occurred or persists at the time of the notice foreseen in item (ii) below, and at the time of return of all wagons as specified under para. (iii) below; (ii) written notice has been given to MRC by the LESSEES 180 (one-hundred and eighty) days in advance to inform on their intention to terminate the Contract; and (iii) all the wagons have been returned by the LESSEES as provided for in Clause 20, the LESSEES will have the right, upon payment of the consideration provided for in Clause 23.2 of the Contract, to irrevocably terminate the Contract with respect to all (and not less than all) wagons. If the LESSEES terminate the Contract pursuant to Clause 23.1, they will pay MRC: i) a fine per leased wagon for the LESSEES for a value in Reais equivalent to the remaining balance in the Contract; and ii) a compensation for any other costs, fines, expenses, damages or disbursement incurred as a result of termination of the contract and other operational documents. Above mentioned value, including that resulting from the established formula in Clause 23.2 of the contract, will be corrected based on the IGP-M (General Market Price Index) within the least time slot allowed by the applicable law. Except in the event of non-compliance by MRC, the values mentioned in clause 23 of the Contract will be owed by the LESSEES to MRC, regardless of the reason which caused termination by the LESSEES.
Nature and reasons for the operation / other relevant Information	

Name of related party	MRC Serviços Ferroviários CBRJ-AL Ltda.
Date of transaction	2/24/2010
Amount (R$)	R$ 8,196,037.28
Current balance (R$)	0.00
Amount of related party	Not applicable
Duration	12/31/2016
Loan or other type of debt	NO

Interest rate	0.0000
Relationship with the Company	A company member of the Mitsui group, Vale controlling group

Table of Contents

Purpose of the contract	Lease of 300 new HPE type wagons. The purpose of the contract is to guarantee operational continuity of plants with sulfur supply.
If issuer is Creditor or Debtor	Debtor
Guaranties and insurance	None
Conditions of termination or expiration	Provided that (i) no breach has occurred or persists at the time of the notice foreseen in item (ii) below, and at the time of return of all wagons as specified under para. (iii) below; (ii) written notice has been given to MRC by the LESSEES 180 (one-hundred and eighty) days in advance to inform on their intention to terminate the Contract; and (iii) all the wagons have been returned by the LESSEES as provided for in Clause 20, the LESSEES will have the right, upon payment of the consideration provided for in Clause 23.2 of the Contract, to irrevocably terminate the Contract with respect to all (and not less than all) wagons. If the LESSEES terminate this Contract pursuant to Clause 23.1, they will pay MRC: i) a fine per leased wagon for the LESSEES for a value in Reais equivalent to the remaining balance in the Contract; and ii) a compensation for any other costs, fines, expenses, damages or disbursement incurred as a result of termination of the contract and other operational documents. Above mentioned value, including that resulting from the established formula in Clause 23.2 of the contract, will be corrected based on the IGP-M (General Market Price Index) within the least time slot allowed by the applicable law. Except in the event of non-compliance by MRC, the values mentioned in clause 23 of the Contract will be owed by the LESSEES to MRC, regardless of the reason which caused termination by the LESSEES.
Nature and reasons for the operation / other relevant Information	**Guarantee the operational continuation of the manufacturing plants with supply of sulfur.**

Name of related party	MRC Equipamentos Ferroviários DZOT FC Ltda.
Date of transaction	11/8/2011
Amount (R$)	24,624,574.54
Current balance (R$)	0.00
Amount of related party	Not applicable
Duration	12/31/2017
Loan or other type of debt	NO
Interest rate	0.0000
Relationship with the Company	A company member of the Mitsui group, Vale controlling group
Purpose of the contract	Lease of 520 new HPE type wagons. The purpose of the contract is to guarantee operational continuity of plants with sulfur supply.
If issuer is Creditor or Debtor	Debtor
Guaranties and insurance	Maintain insurance under the following minimum terms: • property insurance all risks • civil liability against physical integrity damages, death, and property damages resulting out of the use, operation, maintenance, and property of wagons

Conditions of termination or expiration 23. TERMINATION

23.1 Provided that

Table of Contents

	(i) no Breach has occurred or persists at the time of the notice foreseen in item (ii) below, and at the time of return of all wagons as specified under para. (iii) below;
	(ii) written notice has been given to MRC by the LESSEES 180 (one-hundred and eighty) days in advance to inform on their intention to terminate the Contract; and
	(iii) all the Wagons have been returned by the LESSEES as provided for in Clause 20, the LESSEES will have the right, upon payment of the consideration provided for in Clause 23.2 of the Contract, to irrevocably terminate the Contract with respect to all (and not less than all) Wagons.
	23.2 If the LESSEES terminate the Contract pursuant to Clause 23.1, they will pay MRC:
	i) a fine per leased Wagon for the LESSEES for a value in Reais equivalent to the remaining balance in this Contract; and
	ii) a compensation for any other costs, fines, expenses, damages or disbursement incurred as a result of termination of the contract and other operational documents.
	23.3 The value mentioned in Clause 23, including the value resulting from the formula set forth in Clause 23.2 above, will be corrected based on the IGP-M (General Market Price Index) within the least time slot allowed by the applicable law.
	23.4 Except in the event of non-compliance by MRC, the values mentioned in clause 23 of the Contract will be owed by the LESSEES to MRC, regardless of the reason which caused termination by the LESSEES.
Nature and reasons for the operation / other relevant Information	
Name of related party	Ultrafertil S.A. for Vale Fertilizantes S.A.
Date of transaction	1/1/2015
Amount (R$)	61,564,034.89
Current balance (R$)	173,746.38
Amount of related party	Not applicable
Duration	12/31/2015
Loan or other type of debt	No
Interest rate	0.00
Relationship with the Issuer	Related party

Purpose of the contract	Guaranty operating continuity of plants with the use of the port terminal to import input for fertilizers.
If issuer is Creditor or Debtor	Ultrafértil is Creditor and Vale Fertilizantes is Debtor.
Guarantees and insurances	None.
Conditions of termination or expiration	Not applicable.
Nature and reasons for the operation / other relevant Information	

Name of related party	Mitsui & Co. Ltd. and Vale Fertilizers
Date of transaction	1/1/2015
Amount (R$)	0.00
Current balance (R$)	0.00
Amount of related party	Not applicable

Table of Contents

Duration	12/31/2015.
Loan or other type of debt	**No**
Interest rate	**0.00**
Relationship with the Issuer	**Indirect controller**
Purpose of the contract	**Guarantee the operational continuation of the manufacturing plants with supply of sulfur.**
If issuer is Creditor or Debtor	Debtor
Guarantees and insurances	None
Conditions of termination or expiration	Not applicable
Nature and reasons for the operation / other relevant Information	.

Name of related party	Biopalma da Amazônia S.A. Reflorestamento, Indústria E Comércio
Date of transaction	03/17/2011
Amount (R$)	R$ 552,000,000.00
Current balance (R$)	R$ 1,359,721,040.28
Amount of related party	Not applicable
Duration	07/16/2022
Loan or other type of debt	YES
Interest rate	4.50%
Relationship with the Issuer	Subsidiary
Purpose of the contract	Financing of investments
If issuer is Creditor or Debtor	Creditor
Guaranties and insurance	None
Conditions of termination or expiration	EARLY REDEMPTION

Biopalma may redeem the debentures early, as a whole or in part, with no fine.

b) If it intends to exercise the early redemption of Debentures, Biopalma should notify VALE in writing.

c) In case of early redemption of Debentures, under the terms in clause 5.6.2 of the deed, Biopalma should pay VALE, in up to thirty (30) days from date of the notice of early redemption, in full, the remaining balance of the Debentures.

EARLY MATURITY

VALE may determine the early maturity regardless of notice, communication, judicial or extrajudicial notification, in the event of any of the events below:

1) Non-payment by Biopalma on the due date of the principal, of Compensation or any other obligation;

2) Non-compliance of any obligation in the Deed, failing to be solved within ten (10) days 3) If Biopalma present any guaranty assume, as a whole or in part, any financial obligation, or of any nature, from any party or authorize any Subsidiary, direct or indirect, to offer any guaranty or assume any obligation in this agreement, except with VALE s prior written approval;

4) Non-compliance by Biopalma or any of its Affiliates or Subsidiaries with any obligation or condition in any other agreement they are parties in, unresolved within

thirty (30) calendar days, except those in lines (a) and (b) above which shall not be subject to any resolution term;

5) Failure to renew, cancel, revoke, or suspend for a period exceeding thirty (30) days from the date of the event, authorizations and licenses, including environmental and those granted by regulation entities, required to build, operate and maintain its Project and those of its Affiliates and Subsidiaries;

Table of Contents

	6) Amendment, suspension, cancellation, termination or representation of nullity or unenforceability, as a whole or in part of the Deed, without VALE s prior written consent; 7) File for judicial recovery or composition with creditors of the request for extrajudicial recovery filed by Biopalma, or any of its Affiliates or Subsidiaries; 8) Request of termination, liquidation, dissolution, insolvency, bankruptcy, bankruptcy out of legal terms or Biopalma s bankruptcy filed by third parties, or its Affiliates or Subsidiaries; 9) Failure to obtain or renew any approval, permit, registration, or governmental authorization required to have Biopalma comply with obligations set forth in the Deed; 10) Any Relevant Adverse Impact; 11) Any action, arbitration or administrative procedure against Biopalma or its Affiliates or Subsidiaries which, at Vale s discretion, is likely to cause a Relevant Adverse Impact as well as pledge of any of Biopalma s assets in amount exceeding R$ 500,000.00; 12) Any action, arbitration or administrative or judicial procedure related to environmental issues; 13) Reduction of the capital stock of Biopalma, without VALE s prior approval; 14) Early termination of any financial obligation to which Biopalma, its Affiliates or Subsidiaries are subject to, in domestic or international market, individually or jointly, exceeding R$ 500,000.00; 15) Legitimate protest of titles against Biopalma or its Affiliates or Subsidiaries, individually or jointly, exceeding R$ 200,000.00, except when within thirty (30) calendar days from said protest, (i) it is validly proven by Biopalma that the protest was based on mistake or bad faith; (ii) the protest was cancelled or suspended, or, (iii) sufficient guaranties were presented in court; 16) If VALE or its Controller is no longer a shareholder of Biopalma; and 17) Any corporate reorganization of Biopalma, or any of its Affiliates or Subsidiaries.
Nature and reasons for the operation / other relevant Information	Available interest rate: Libor 6M + 4.5% per year The purpose of the operation is to finance investments related to cultivation, production, and trading of palm oil. 4 (four) debentures were issued: 03/17/2011 (1st series of 1st issue), 08/03/2011 (2nd series, 1st issue), and 10/31/2011 (2nd issue), 02/23/2012 (3rd issue), and 06/15/2012 (4th issue). The amount reported above corresponds to the sum of the 4 issues.
Name of related party	Norte Energia S.A
Date of transaction	12/10/2012
Amount (R$)	R$ 15,616,171,098.59

Current balance (R$)	R$ 15,616,171,098.59
Amount of related party	Not applicable
Duration	30 years by 8/26/2045
Loan or other type of debt	No
Interest rate	0.00
Relationship with the Issuer	Subsidiary
Purpose of the contract	Power supply agreement to be supplied by Norte Energia S.A. to Vale S.A., with annual adjustment according to the IPCA
If issuer is Creditor or Debtor	Not applicable
Guaranties and insurance	Seguro Collateral in the amount of R$4,122,874.10 in effect by 1/31/2016
Conditions of termination or expiration	Not applicable

Table of Contents

Name of related party	Aliança Geração de Energia S.A
Date of transaction	2/27/2015
Amount (R$)	R$ 8,956,006,893.10
Current balance (R$)	R$ 8,609,032,134.55
Amount of related party	Not applicable
Duration	21 years, by 8/28//2036
Loan or other type of debt	No
Interest rate	0.00
Relationship with the Issuer	Subsidiary
Purpose of the contract	Power supply agreement to be supplied by Aliança Energia S.A. to Vale S.A., with annual adjustment according to the IPCA.
If issuer is Creditor or Debtor	Not applicable
Guaranties and insurance	None.
Conditions of termination or expiration	Not applicable

Name of related party	Vale S.A. and FCA S.A.
Date of transaction	10/01/2013
Amount (R$)	R$ 3,595,200.00
Current balance (R$)	R$ 2,498,807.81
Amount of related party	Not applicable
Duration	09/30/2014
Loan or other type of debt	NO
Interest rate	0.000000
Relationship with issuer	Subsidiary
Purpose of the contract	Sale of cargo railway transportation services by FCA to Vale, of iron ore, from Capitão Eduardo/MG to Pedreira Rio das Velhas/MG.
If issuer is Creditor or Debtor	Debtor
Guaranties and insurance	Not applicable
Conditions of termination or expiration	The agreement can be terminated ipso jure in case of not complying with any of its conditions, as well as in the case of bankruptcy or judicial or extrajudicial recovery, under the provisions or Act 11.101, of 02.09.2005, of any of the contracting parties without need of any judicial or extrajudicial notification for this purpose. This contract may be terminated by either party, without any charge, provided it is done in writing with at least 30 (thirty) days in advance, of the intended termination date. If that is the case, no indemnification or compensation for whatever reason may be paid, not even for loss or damage.
Nature and reasons for the operation / other relevant information	Each party shall appoint a duly qualified professional to act as contract manager, who shall be entitled to acting, under the agreement, aiming to protect and preserve all rights of the represented party

Name of related party	FCA S.A.
Date of transaction	08/26/2014
Amount (R$)	R$1,076,040.00

Current balance (R$)	R$1,076,040.00
Amount of related party	Not applicable
Duration	08/26/2017
Loan or other type of debt	NO

Table of Contents

Interest rate	0.000000
Relationship with issuer	Subsidiary
Purpose of the contract	Sale of cargo railway transportation services by FCA to Vale, of tires, equipment and vehicle and machinery accessories, flowing from Sabará/MG to Contagem/MG.
If issuer is Creditor or Debtor	Debtor
Guaranties and insurance	Not applicable
Conditions of termination or expiration	This agreement may be terminated by either party by means of written notice to the other party with no right to claims, indemnity, or compensation for the notified party, under the following circumstances: a) Petition or declaration of bankruptcy or liquidation, or judicial or extrajudicial recovery by the other party; b) In the event of an act of God or force majeure that comes to stop the execution of this Contract for more than 30 days; c) Fraud or misconduct; Without prejudice to the satisfaction of other rights, Vale, at its sole discretion, may terminate this Agreement by means of written notice to FCA, at least 30 days in advance, with no right to claims, indemnity, or compensation for FCA, under the following circumstances: a) non-compliance by FCA of any contractual obligation; b) assignment, subcontracting and/or partial or total transfer of contractual obligations to third parties; Without prejudice to the satisfaction of other rights, FCA, at its sole discretion, may terminate this Agreement by means of written notice to Vale, at least 30 days in advance, with no right to claims, indemnity, or compensation for Vale, under the following circumstances: delay to provide information that affect contract performance and non-compliance with any contractual obligation. Upon termination of this contract, under any circumstance, pending issues must be settled within 60 days.
Nature and reasons for the operation / other relevant information	
Name of related party	FCA S.A.
Date of transaction	09/24/2014
Amount (R$)	R$2,000,000.00

Current balance (R$)	R$149,212.99
Amount of related party	
Duration	09/24/2016
Loan or other type of debt	NO
Interest rate	0.000000
Relationship with issuer	Subsidiary
Purpose of the contract	Provision of railway transportation for own cargo by Vale to FCA, of railway operation equipment (locomotives, road equipment, wagons etc.,) and tracks, and Vale is responsible for transportation through the Railway Vitória a Minas, excluding any type of service related to the loading of wagons at the terminals of origin and unloading of wagons at the destination terminal, which are sole responsibility of FCA.
If issuer is Creditor or Debtor	Creditor

Table of Contents

Guaranties and insurance	Not applicable
Conditions of termination or expiration	This agreement may be terminated by either party by means of written notice to the other party with no right to claims, indemnity, or compensation for the notified party, under the following circumstances: a) Petition or declaration of bankruptcy or liquidation, or judicial or extrajudicial recovery by the other party; b) In the event of an act of God or force majeure that comes to stop the execution of this Contract for more than 30 days; c) Fraud or misconduct; Without prejudice to the satisfaction of other rights, Vale, at its sole discretion, may terminate this Agreement by means of written notice to FCA, at least 30 days in advance, with no right to claims, indemnity, or compensation for FCA, under the following circumstances: a) non-compliance by FCA of any contractual obligation; b) assignment, subcontracting and/or partial or total transfer of contractual obligations to third parties; Without prejudice to the satisfaction of other rights, FCA, at its sole discretion, may terminate this Agreement by means of written notice to Vale, at least 30 days in advance, with no right to claims, indemnity, or compensation for Vale, under the following circumstances: delay to provide information that affect contract performance and non-compliance with any contractual obligation. Upon termination of this contract, under any circumstance, pending issues must be settled within 60 days. Should the Order Termination occur due to non-compliance with contractual obligation, the Non-compliant Party should pay the other Party a non-compensation termination fine in the amount corresponding to R$ 200,000.00, updated according to variations to the IGP-M/FGV General Market Price Index.
Nature and reasons for the operation / other relevant information	
Name of related party	FCA S.A.

Date of transaction	05/01/2014
Amount (R$)	R$ 35,636,957.29
Current balance (R$)	R$ 9,539,353.89
Amount of related party	Not applicable
Duration	05/01/2019
Loan or other type of debt	NO
Interest rate	0.000000
Relationship with issuer	Subsidiary
Purpose of the contract	Sale of load railway transportation services, by FCA to Vale, of Anthracite, calcite limestone, dolomite limestone, lime, mill ball, through the flow of the respective routes Tubarão x Prudente de Moraes, Matosinhos and/or Nova Granja x Tubarão, Morro Grande x Tubarão, Matosinhos and/or Nova Granja x Tubarão and lastly Parque Industrial x Tubarão.
If issuer is Creditor or Debtor	Debtor
Guaranties and insurance	Take or pay for annual contracted volumes

Table of Contents

Conditions of termination or expiration	This agreement may be terminated by either party by means of written notice to the other party with no right to claims, indemnity, or compensation for the notified party, under the following circumstances: a) Petition or declaration of bankruptcy or liquidation, or judicial or extrajudicial recovery by the other party; b) In the event of an act of God or force majeure that comes to stop the execution of this Contract for more than 30 days; c) Fraud or misconduct; Without prejudice to the satisfaction of other rights, Vale, at its sole discretion, may terminate this Agreement by means of written notice to FCA, at least 30 days in advance, with no right to claims, indemnity, or compensation for FCA, under the following circumstances: a) non-compliance by FCA of any contractual obligation; b) assignment, subcontracting and/or partial or total transfer of contractual obligations to third parties; Without prejudice to the satisfaction of other rights, FCA, at its sole discretion, may terminate this Agreement by means of written notice to Vale, at least 30 days in advance, with no right to claims, indemnity, or compensation for Vale, under the following circumstances: delay to provide information that affect contract performance and non-compliance with any contractual obligation. Upon termination of this contract, under any circumstance, pending issues must be settled within 60 days.
Nature and reasons for the operation / other relevant information	
Name of related party	FCA S.A.
Date of transaction	10/17/2014
Amount (R$)	R$10,037,700.00
Current balance (R$)	R$ 4,869,634.07
Amount of related party	Not applicable
Duration	02/03/2016
Loan or other type of debt	NO
Interest rate	0.000000

Relationship with issuer	Subsidiary
Purpose of the contract	Provision of cargo railway transportation services by FCA to VALE, to carry diesel from Pool de Embiruçu (EYU) to João Paulo (VJP).
If issuer is Creditor or Debtor	Debtor
Guaranties and insurance	Not applicable
Conditions of termination or expiration	This agreement may be terminated by either party by means of written notice to the other party with no right to claims, indemnity, or compensation for the notified party, under the following circumstances: a) Petition or declaration of bankruptcy or liquidation, or judicial or extrajudicial recovery by the other party; b) In the event of an act of God or force majeure that comes to stop the execution of this Contract for more than 30 days; c) Fraud or misconduct;

Table of Contents

	Without prejudice to the satisfaction of other rights, Vale, at its sole discretion, may terminate this Agreement by means of written notice to FCA, at least 30 days in advance, with no right to claims, indemnity, or compensation for FCA, under the following circumstances: a) non-compliance by FCA of any contractual obligation; b) assignment, subcontracting and/or partial or total transfer of contractual obligations to third parties; Without prejudice to the satisfaction of other rights, FCA, at its sole discretion, may terminate this Agreement by means of written notice to Vale, at least 30 days in advance, with no right to claims, indemnity, or compensation for Vale, under the following circumstances: delay to provide information that affect contract performance and non-compliance with any contractual obligation. Upon termination of this contract, under any circumstance, pending issues must be settled within 60 days. The party that gave rise to contract termination shall pay to the other party a termination fine in amount equal to the average income in the last three months of this contract.
Nature and reasons for the operation / other relevant information	

Name of related party	FCA S.A.
Date of transaction	01/31/2014
Amount (R$)	R$3,491,828.70
Current balance (R$)	R$ 5,265.33
Amount of related party	Not applicable
Duration	01/31/2017
Loan or other type of debt	NO
Interest rate	0.000000
Relationship with issuer	Subsidiary
Purpose of the contract	Provision of cargo railway transportation services by FCA to VALE, to carry diesel from Pool de Embiruçu (EYU) to Drumond (VDD).
If issuer is Creditor or Debtor	Debtor
Guaranties and insurance	Not applicable
Conditions of termination or expiration	This agreement may be terminated by either party by means of written notice to the other party with no right to claims, indemnity, or compensation for the notified party, under the following circumstances: a) Petition or declaration of bankruptcy or liquidation, or judicial or extrajudicial recovery by the other party;

b) In the event of an act of God or force majeure that comes to stop the execution of this Contract for more than 30 days;

c) Fraud or misconduct;

Without prejudice to the satisfaction of other rights, Vale, at its sole discretion, may terminate this Agreement by means of written notice to FCA, at least 30 days in advance, with no right to claims, indemnity, or compensation for FCA, under the following circumstances:

a) non-compliance by FCA of any contractual obligation;

Table of Contents

	b) assignment, subcontracting and/or partial or total transfer of contractual obligations to third parties; Without prejudice to the satisfaction of other rights, FCA, at its sole discretion, may terminate this Agreement by means of written notice to Vale, at least 30 days in advance, with no right to claims, indemnity, or compensation for Vale, under the following circumstances: delay to provide information that affect contract performance and non-compliance with any contractual obligation. Upon termination of this contract, under any circumstance, pending issues must be settled within 60 days. The party that gave rise to contract termination shall pay to the other party a termination fine in amount equal to the average income in the last three months of this contract.
Nature and reasons for the operation / other relevant information	
Name of related party	FCA S.A.
Date of transaction	7/24/2015
Amount (R$)	R$ 1,155,735.00
Current balance (R$)	R$ 1,155,735.00
Amount of related party	Not applicable
Duration	7/24/2015
Loan or other type of debt	NO
Interest rate	0,.000000
Relationship with issuer	Subsidiary
Purpose of the contract	Sale of cargo railway transportation by FCA to Vale, for empty wagons (GDE), from Boa Vista Nova/SP to Costa Lacerda/MG
Guaranties and insurance	Not applicable
Conditions of termination or expiration	The agreement can be terminated ipso jure in case of not complying with any of its conditions, as well as in the case of bankruptcy or judicial or extrajudicial recovery, under the provisions or Act 11.101, of 02.09.2005, of any of the contracting parties without need of any judicial or extrajudicial notification for this purpose.
Nature and reasons for the operation / other relevant information	
Name of related party	Banco Nacional de Desenvolvimento Econômico e Social BNDES
Date of transaction	1/6/1997
Amount (R$)	R$76,251,999.65
Current balance (R$)	R$1,146,033,899.91
Amount of related party	Not applicable
Duration	3/31/2021
Loan or other type of debt	YES
Interest rate	6.500000%
Relationship with issuer	Indirect controller

Purpose of the contract	Feasibility of development and deployment of the project aiming to use mineral reserves of Salobo Metais S.A.
If issuer is Creditor or Debtor	Debtor
Guaranties and insurance	Corporate guaranty by Vale
Conditions of termination or expiration	Not applicable

Table of Contents

Nature and reasons for the operation / other relevant information	Applicable interest rate is: IGP-DI + 6.50% p.a. Debentures issued by Salobo Metais S.A., privately, which have been fully subscribed by Banco Nacional de Desenvolvimento Econômico e Social (BNDES). BNDES holds debentures issued by Salobo Metais S.A., with the right to subscribe to preferred shares issued by Salobo, in exchange of part of outstanding debentures, and this right terminates two years after Salobo achieves accrued income equivalent to 200,000 tons of copper. Upon issuance of shares arising out of the exercise of the subscription right, the premium will be paid in the amount corresponding to dividends distributed to shareholders to that date, proportional to shares subscribed by BNDES or its assignee. In March 2015, the Salobo mine reached the production required to start the debt payment flow, under terms above
Name of related party	Ultrafertil S.A. for Vale Fertilizantes S.A.
Date of transaction	1/1/2016
Amount (R$)	134,937,267.16
Current balance (R$)	7,775,625.40
Amount of related party	Not applicable
Duration	12/31/2016
Loan or other type of debt	No
Interest rate	0.00
Relationship with issuer	Related party
Purpose of the contract	Guaranty operating continuity of plants with the use of the port terminal to import input for fertilizers.
If issuer is Creditor or Debtor	Ultrafértil is creditor and Vale Fertilizantes is debtor.
Guaranties and insurance	None.
Conditions of termination or expiration	Not applicable.
Nature and reasons for the operation / other relevant information	
Name of related party	Companhia Mineira Miski Mayo (_Miski Mayo_) and Komatsu-Mitsui Maquinarias Peru S.A. (_KMMP_).
Date of transaction	2/11/2015
Amount (R$)	1,053,848,454.00
Current balance (R$)	172,268,810.00
Amount of related party	1,053,848,454.00
Duration	1/31/2017
Loan or other type of debt	NO
Interest rate	
Relationship with issuer	Mitsui holds interest in Valepar S.A., holding and parent company of Vale and relevant interest in KMMP. Miski Mayo, in turn, is a Joint Venture between Vale,

	Mitsui and Mosaic Company.
Purpose of the contract	Supply of parts and provision of maintenance services for the Komatsu fleet at the mining unit Bayóvar (in Peru). This is a MARC contract (*Maintenance and Repair Contract*), where the supplier provides maintenance services for the fleet of Komatsu equipment of Miski Mayo.
If issuer is Creditor or Debtor	Debtor

Table of Contents

Guaranties and insurance	Insurance: KMMP and its /subsidiaries will contract and maintain current, at their own cost, during the term of the agreement, the following insurance policies: (a) civil liability with coverage of up to US$ 5 million; (b) compulsory traffic accident insurance for vehicles running from and to the mine; (c) additional insurance for hazardous jobs for maintenance work; and (d) life insurance and health care assistance, as determined by local laws. Guaranty: KMMP offers technical warranty for maintenance services, ensuring the resumption of operating conditions of equipment prior to failures.
Conditions of termination or expiration	In case of: (a) non-compliance for over 60 days; (b) bankruptcy, composition with creditors, insolvency, or judicial or extrajudicial dissolution; (c) stoppage of supplies for over 15 consecutive days; (d) act of God or force majeure for more than 90 days; (e) if there is any fatal accident as consequence of direct negligence by KMMP; or (f) by means of written notice to the other party at least six months prior to termination.
Nature and reasons for the operation / other relevant information	

Name of related party	Banco do Brasil S.A.
Date of transaction	9/3/2015
Amount (R$)	R$ 190.085.000.00
Current balance (R$)	R$ 196,513,615.6
Amount of related party	Not applicable
Duration	8/26/2016
Loan or other type of debt	YES
Interest rate	2.060000%
Relationship with issuer	Banco do Brasil S.A. sponsors PREVI Caixa de Previdência dos Funcionários do Banco do Brasil, entity that deals with the private pension funds of employees of Banco do Brasil that holds interest in Valepar S.A. (holding and parent company of Vale) through Litel Participações (Litel)
Purpose of the contract	Financing exportation
If issuer is Creditor or Debtor	Debtor
Guaranties and insurance	Not applicable
Conditions of termination or expiration	Not applicable
Nature and reasons for the operation / other relevant information	Interest rate is 2.06% per annum

Name of related party	Banco do Brasil S.A.
Date of transaction	9/3/2015
Amount (R$)	R$ 188,775,000.00
Current balance (R$)	R$ 197,422,457.8
Amount of related party	Not applicable
Duration	8/21/2017
Loan or other type of debt	YES
Interest rate	3.530000%
Relationship with issuer	Banco do Brasil S.A. sponsors PREVI Caixa de Previdência dos Funcionários do Banco do Brasil, entity that deals with the private pension funds of employees of

	Banco do Brasil that holds interest in Valepar S.A. (holding and parent company of Vale) through Litel Participações (Litel)
Purpose of the contract	Financing exportation

Table of Contents

If issuer is Creditor or Debtor	Debtor
Guaranties and insurance	Not applicable
Conditions of termination or expiration	Not applicable
Nature and reasons for the operation / other relevant information	Interest rate is 3.53% per annum

Name of related party	Banco do Brasil S.A.
Date of transaction	9/4/2015
Amount (R$)	R$ 189,650,000.00
Current balance (R$)	R$ 197,421,698.5
Amount of related party	Not applicable
Duration	8/24/2017
Loan or other type of debt	YES
Interest rate	3.560000%
Relationship with issuer	Banco do Brasil S.A. sponsors PREVI Caixa de Previdência dos Funcionários do Banco do Brasil, entity that deals with the private pension funds of employees of Banco do Brasil that holds interest in Valepar S.A. (holding and parent company of Vale) through Litel Participações (Litel)
Purpose of the contract	Financing exportation
If issuer is Creditor or Debtor	Debtor
Guaranties and insurance	Not applicable
Conditions of termination or expiration	Not applicable
Nature and reasons for the operation / other relevant information	Interest rate is 3.56% per annum

Name of related party	Banco do Brasil S.A.
Date of transaction	9/4/2015
Amount (R$)	R$ 189,525,000.00
Current balance (R$)	R$ 197,421,698.5
Amount of related party	Not applicable
Duration	8/24/2017
Loan or other type of debt	YES
Interest rate	3.560000% per annum
Relationship with issuer	Banco do Brasil S.A. sponsors PREVI Caixa de Previdência dos Funcionários do Banco do Brasil, entity that deals with the private pension funds of employees of Banco do Brasil that holds interest in Valepar S.A. (holding and parent company of Vale) through Litel Participações (Litel)
Purpose of the contract	Financing exportation
If issuer is Creditor or Debtor	Debtor
Guaranties and insurance	Not applicable
Conditions of termination or expiration	Not applicable
	Interest rate is 3.56% per annum

Nature and reasons for the operation / other relevant information	The operation presents attractive costs compared to the average raising cost of Vale and the cost of other players in the market.

Name of related party	Banco do Brasil S.A.
Date of transaction	9/4/2015

638

Table of Contents

Amount (R$)	R$ 227,370,000.00
Current balance (R$)	R$ 236,906,038.3
Amount of related party	Not applicable
Duration	8/24/2017
Loan or other type of debt	YES
Interest rate	3.560000%
Relationship with issuer	Banco do Brasil S.A. sponsors PREVI Caixa de Previdência dos Funcionários do Banco do Brasil, entity that deals with the private pension funds of employees of Banco do Brasil that holds interest in Valepar S.A. (holding and parent company of Vale) through Litel Participações (Litel)
Purpose of the contract	Financing exportation
If issuer is Creditor or Debtor	Debtor
Guaranties and insurance	Not applicable
Conditions of termination or expiration	Not applicable
Nature and reasons for the operation / other relevant information	Interest rate is 3.56% per annum

Name of related party	Banco do Brasil S.A.
Date of transaction	11/30/2015
Amount (R$)	R$ 192,225,000.00
Current balance (R$)	R$ 195,943,026.70
Amount of related party	Not applicable
Duration	6/9/2017
Loan or other type of debt	YES
Interest rate	4.470000
Relationship with issuer	Banco do Brasil S.A. sponsors PREVI Caixa de Previdência dos Funcionários do Banco do Brasil, entity that deals with the private pension funds of employees of Banco do Brasil that holds interest in Valepar S.A. (holding and parent company of Vale) through Litel Participações (Litel)
Purpose of the contract	Financing exportation
If issuer is Creditor or Debtor	Debtor
Guaranties and insurance	Not applicable
Conditions of termination or expiration	Not applicable
Nature and reasons for the operation / other relevant information	Interest rate is 4.47% per annum

Name of related party	Banco do Brasil S.A.
Date of transaction	11/30/2015
Amount (R$)	R$ 116,445,000.00
Current balance (R$)	R$ 117,580,361.4
Amount of related party	Not applicable
Duration	6/9/2017
Loan or other type of debt	YES
Interest rate	4.470000
Relationship with issuer	Banco do Brasil S.A. sponsors PREVI Caixa de Previdência dos Funcionários do Banco do Brasil, entity that deals with the private pension funds of employees of Banco do Brasil that holds interest in Valepar S.A. (holding and parent company of Vale) through Litel Participações (Litel)
Purpose of the contract	Financing exportation

Table of Contents

If issuer is Creditor or Debtor	Debtor
Guaranties and insurance	Not applicable
Conditions of termination or expiration	Not applicable
Nature and reasons for the operation / other relevant information	Interest rate is 4.47% per annum
Name of related party	Banco do Brasil S.A.
Date of transaction	12/8/2015
Amount (R$)	R$ 189,840,000.00
Current balance (R$)	R$ 195,710,365.70
Amount of related party	Not applicable
Duration	3/2/2017
Loan or other type of debt	YES
Interest rate	4.130000%
Relationship with issuer	Banco do Brasil S.A. sponsors PREVI Caixa de Previdência dos Funcionários do Banco do Brasil, entity that deals with the private pension funds of employees of Banco do Brasil that holds interest in Valepar S.A. (holding and parent company of Vale) through Litel Participações (Litel)
Purpose of the contract	Financing exportation
If issuer is Creditor or Debtor	Debtor
Guaranties and insurance	Not applicable
Conditions of termination or expiration	Not applicable
Nature and reasons for the operation / other relevant information	Interest rate is 4.13% per annum
Name of related party	Banco do Brasil S.A.
Date of transaction	1/5/2016
Amount (R$)	R$ 200,570,000.00
Current balance (R$)	R$ 200,570,000.00
Amount of related party	Not applicable
Duration	2/3/2017
Loan or other type of debt	YES
Interest rate	4.12%
Relationship with issuer	Banco do Brasil S.A. sponsors PREVI Caixa de Previdência dos Funcionários do Banco do Brasil, entity that deals with the private pension funds of employees of Banco do Brasil that holds interest in Valepar S.A. (holding and parent company of Vale) through Litel Participações (Litel)
Purpose of the contract	Financing exportation
If issuer is Creditor or Debtor	Debtor
Guaranties and insurance	Not applicable
Conditions of termination or expiration	Not applicable
Nature and reasons for the operation / other relevant information	Interest rate is 4.12% per annum
Name of related party	Banco Bradesco S.A.
Date of transaction	1/6/2016
Amount (R$)	R$ 201,515,000.00

Table of Contents

Current balance (R$)	R$ 201,515,000.00
Amount of related party	Not applicable
Duration	2/3/2017
Loan or other type of debt	YES
Interest rate	6.00%
Relationship with issuer	Bradespar S.A., shareholder of Valepar S.A. (holding and parent company of Vale), and Banco Bradesco are under common control.
Purpose of the contract	Financing exportation
If issuer is Creditor or Debtor	Debtor
Guaranties and insurance	Not applicable
Conditions of termination or expiration	Not applicable
	Interest rate is 6.00% per annum
Nature and reasons for the operation / other relevant information	
Name of related party	Banco Bradesco S.A.
Date of transaction	1/6/2016
Amount (R$)	R$ 80,606,000.00
Current balance (R$)	R$ 80,606,000.00
Amount of related party	Not applicable
Duration	12/2/2016
Loan or other type of debt	SIM
Interest rate	5.77%
Relationship with issuer	Bradespar S.A., shareholder of Valepar S.A. (holding and parent company of Vale), and Banco Bradesco are under common control.
Purpose of the contract	Financing exportation
If issuer is Creditor or Debtor	Debtor
Guaranties and insurance	Not applicable
Conditions of termination or expiration	Not applicable
	Interest rate is 5.77% per annum
Nature and reasons for the operation / other relevant information	
Name of related party	Banco Bradesco S.A
Date of transaction	11/30/2015
Amount (R$)	R$ 192,500,000.00
Current balance (R$)	R$ 195,960,761.0
Amount of related party	Not applicable
Duration	6/9/2017
Loan or other type of debt	YES
Interest rate	4.430000%
Relationship with issuer	Bradespar S.A., shareholder of Valepar S.A. (holding and parent company of Vale), and Banco Bradesco are under common control.
Purpose of the contract	Financing exportation - ACC
If issuer is Creditor or Debtor	Debtor
Guaranties and insurance	Not applicable
Conditions of termination or expiration	Not applicable
	Interest rate is 4.43% per annum
Nature and reasons for the operation / other relevant information	

Table of Contents

Name of related party	Banco Bradesco S.A
Date of transaction	11/30/2015
Amount (R$)	R$ 188,625,000.00
Current balance (R$)	R$ 195,822,520.3
Amount of related party	Not applicable
Duration	3/17/2017
Loan or other type of debt	SIM
Interest rate	4,670000%
Relationship with issuer	Bradespar S.A., shareholder of Valepar S.A. (holding and parent company of Vale), and Banco Bradesco are under common control.
Purpose of the contract	Financing exportation - ACC
If issuer is Creditor or Debtor	Debtor
Guaranties and insurance	Not applicable
Conditions of termination or expiration	Not applicable
Nature and reasons for the operation / other relevant information	Interest rate is 4.67% per annum
Name of related party	Banco Bradesco S.A
Date of transaction	12/7/2015
Amount (R$)	R$ 187,225,000.00
Current balance (R$)	R$ 195,781,682.5
Amount of related party	Not applicable
Duration	1/10/2017
Loan or other type of debt	YES
Interest rate	4.540000%
Relationship with issuer	Bradespar S.A., shareholder of Valepar S.A. (holding and parent company of Vale), and Banco Bradesco are under common control.
Purpose of the contract	Financing exportation - ACC
If issuer is Creditor or Debtor	Debtor
Guaranties and insurance	Not applicable
Conditions of termination or expiration	Not applicable
Nature and reasons for the operation / other relevant information	Interest rate is 4.54% per annum
Name of related party	Banco Bradesco S.A
Date of transaction	12/18/2015
Amount (R$)	R$ 78,090,000.00
Current balance (R$)	R$ 78,198,10.52
Amount of related party	Not applicable
Duration	6/9/2017
Loan or other type of debt	SIM
Interest rate	5.23%

Table of Contents

Relationship with issuer	Bradespar S.A., shareholder of Valepar S.A. (holding and parent company of Vale), and Banco Bradesco are under common control.
Purpose of the contract	Financing exportation - ACC
If issuer is Creditor or Debtor	Debtor
Guaranties and insurance	Not applicable
Conditions of termination or expiration	Not applicable
Nature and reasons for the operation / other relevant information	Interest rate is 5.23% per annum

Table of Contents

16.3 Identification of measures taken to address the conflict of interest and demonstration of the strictly commutative nature of conditions agreed upon or appropriate compensation payment

a. identify measures adopted to deal with conflict of interests

Under the terms in the Policy of Related Parties of the Company, the Board of Directors and the Executive Office must certify that the transactions with related parties should be formalized in writing, under mutually agreed upon conditions, compliant with market conditions, including the appropriate compensation payment, if any.

For that end, the Board of Directors counts on the assistance by the Governance and Sustainability Committee that should be involved to evaluate the selection process and the transaction conditions, issuing a report on potential conflict of interests.

The Board of Directors may create groups, responding to the Executive Office, that meet the specificities and nature of the operations, notwithstanding, the Executive Office and the management areas, as applicable, shall maintain the groups duly informed about transactions with related parties.

The shareholder or shareholder proxy, member of the Board of Directors or the Executive Office of Vale that is under a conflict of interest situation should notify immediately the conflict of interest. Should it fail to do, another person may notify the conflict. As soon as the conflict of interest is found regarding a specific issue, the shareholder or shareholder proxy involved will have access solely to information and documentation on this matter as disclosed to the market, under the terms in current laws and should be absent, including physically, from discussions in Shareholders Meetings, always compliant with its legal obligations. The notification of the conflict of interest, the absence and the temporary leave should be registered in the minutes.

In addition, as soon as the conflict of interest is identified related to a specific issue, the member of the Board of Directors or Executive Office that is involved should not receive information and documentation on this matter and should be absent, including physically, from discussions, always compliant with its legal obligations. The notification of the conflict of interest, the absence and the temporary leave should be registered in the minutes.

If requested by the President of the Table, Chairman of the Board of Directors or the President of the Company, as the case may be, the shareholders and shareholders proxies, members of the Board of Directors or Executive Office of Vale involved in conflict of interests may partially participate in the discussion, aiming to provide further information about the Transaction with Related Party object of the discussion. In this case, they should be absent from the final portion of the discussion.

b. demonstrate the strictly agreement of conditions or appropriate compensation payment

Transactions concluded with related parties are supported by prior, careful evaluations of the terms therein, so that they take place under strictly equitable conditions, obeying the normal market prices and conditions. Thus, transactions with related parties do not generate any undue benefits or harm to the parties involved.

To check the equitable nature of operations with related parties, the Company reviews the financial viability of each operation vis-à-vis similar market transactions between unrelated parties. The Company uses comparative analysis methods.

Transactions with related parties of the Company may, in general, be divided into: (i) Operational transactions, and (ii) Financial transactions.

Within the operational part of its activities, Vale performs a substantial volume of transactions with its wholly owned subsidiaries, subsidiaries and companies under joint control with third parties, in view of its policy of integration of its activities in the production and commercial chain. Besides the extraction of minerals, Vale invests in activities related to transport, logistics, and energy services and supplies required to achieving its corporate purpose. In this context, several operational contracts have been signed between Vale and members of companies in its group, always taking care to observe fair and balanced terms and avoid discrepancies with market conditions, as required by Corporate and Tax laws.

Table of Contents

With respect to transactions of a financial nature, Vale seeks continuously and energetically to find the best options to raise and use resources available in local and international markets, with a view to securing or investing resources. Overall, investments are undertaken in order to maintain the liquidity of the Company available for its investments coupled with a conservative policy regarding the assuming of credit risk of counterparties, with a focus on maintaining its assets in first-tier banks.

Find below the measures seen in main operations with related parties as mentioned in item 16.2, executed in the last fiscal year:

- *Mineração Brasileiras Reunidas S.A. (MBR) (contract executed on 8/19/2015).* The Contract refers to the 4th private issuance of simple debentures, non-convertible into shares, in single series issued by Vale The purpose of issuing funds was to reinforce cash flow and working capital. Debentures fully subscribed by MBR. The operation considered the establishment of more attractive conditions than the ones usually offered in the market for this type of operation.

- *Banco Bradesco S.A. (contract executed on 3/24/2015)* succeeded by CIBRASEC Companhia Brasileira de Securitização in the contract related to the issuance of CCB used as support for CRI, to fund projects under S11D Logística, at Complexo Portuário de Ponta Madeira. The operation considered the establishment of more attractive conditions than the ones usually offered in the market for this type of operation.

- *Banco Bradesco S.A and Banco Bradesco S.A., New York Branch (respectively, Bank Deposit Certificate and Time Deposit contracts).* These operations were according to the same evaluation criteria, price study and procedures that guide negotiations with third parties unrelated to Vale, regardless of value and characteristic, the operations considered the establishment of more attractive conditions than the ones usually offered in the market for this type of operation.

- *Banco Bradesco S.A. (Financing exportation ACC).* The operation presents attractive costs compared to the average raising cost of Vale and the cost of other players in the market and were according to the same evaluation criteria, price study and procedures that guide negotiations with third parties unrelated to Vale, regardless of value and characteristic. In the decision-making process of Vale, board members appointed by Bradespar did not receive documents or information related to this matter and did not participate in the decision.

- *Ultrafertil S.A. (Ultrafertil) and Vale Fertilizantes S.A. (Vale Fertilizantes) (contract executed on 1/1/2015).* The purpose of the Contract was to guarantee operating continuity of plants with the use of the port terminal to import input for fertilizers. After market survey, Ultrafertil was deemed as the company that offered best conditions to contract the port terminal to import input for fertilizers.

• *Mitsui & Co. Ltd. (Mitsui) and Vale Fertilizantes (contract executed on 01/01/2015).* The purpose of the Contract was to guarantee operating continuity of plants with the supply of sulfur. According to internal contracting and compliance policies, there have been budget and price investigation with market competitors for the provision of services, and Mitsui offered the best economic proposal, reason why it was contracted.

• *Aliança Geração de Energia S.A. (Aliança) (contract executed on 2//272015).* The purpose of the Contract is the supply of power by Aliança à to the Company, with annual adjustment under IPCA. The contract presents attractive costs compared to cost offered by other players in the market.

• *Companhia Mineira Miski Mayo (Miski Mayo) and Komatsu-Mitsui Maquinarias Peru S.A. (KMMP) (amendment executed on 2/11/2015).* The Contract refers to the provision of parts and maintenance service for the Komnatsu fleet at the mining unit Bayóvar (in Peru). KMMP, as representative of the manufacturer of Komatsu equipment in Peru, has technical skills and expertise being service providers since the beginning of these operations. The cost of these services is compatible with other maintenance costs for similar operations of Vale. Under the decision making process of Vale, board members appointed by Mitsui did not receive documents or information related to this matter and did not participate in the decision.

• *Banco Nacional de Desenvolvimento Econômico e Social (BNDES) (contract executed on 6/19/2015).* The Contract refers to economic rights held by BNDES in case of development by Vale of Projeto Alemão, as provided for under the terms in the Advancement Contract for Future Interest , executed on 3/5/1985, by the payment of royalties by Vale to BNDES. Projeto Alemão is a Vale project in the area of Carajás, in the State of Pará, which has not been approved, that aims production of copper concentrate. According to the Advancement Contract for Future Interest, BNDES is entitled to 1/3 (one third) of the economic rights arising out of Projeto Alemão. Therefore, BNDES share in this project was regulated by the

Table of Contents

payment of royalties, determined by using a specific economic model. Under the decision making process of Vale, board members appointed by BNDESPAR did not receive documents or information related to this matter and did not participate in the decision.

• *BNDES Participações S.A. BNDESPAR (contract executed on 6/23/2015). The Contract for Acquisition of Shares issued by VLI S.A., held by Vale S.A., executed with BNDESPAR, arises out of understanding between VALE and BNDESPAR which resulted in the execution on June 23, 2015 of amendment to the deed of the Private Issuance of Debentures to fund the project to expand Ferrovia Norte Sul - FNS. Under this amendment, there has been exclusion of (i) (i) the possibility to exchange Debentures for shares issued by VLI, and the entirety of obligations of VLI and FNS from these deeds, granting, free of charge, to BNDESPAR purchase options of a specific number of common shares issued by VLI held by Vale.*

• *Fundo de Investimento em Participações Multisetorial Plus II (FIP Multisetorial) (contract executed on 7/29/2015) succeeded by Bradesco BBI S.A.* The contract refers to purchase and sale of preferred shares class A, issued by Minerações Brasileiras Reunidas S.A. MBR (MBR) and held by Vale, representing 36.4% of the capital stock of MBR, for R$4.0 billion. The acquisition of shares was supported by a Valuation report issued by Ernst & Young. The issuer studied proposals by other potential players. Proposals contained terms and conditions that were last favorable compared to the proposal by FIP Multisetorial. Under the decision making process of Vale, board members appointed by Bradespar did not receive documents or information related to this matter and did not participate in the decision.

• *Banco do Brasil S.A. (Bank Deposit Certificates).* These operations were according to the same evaluation criteria, price study and procedures that guide negotiations with third parties unrelated to Vale, regardless of value and characteristic, the operations considered the establishment of more attractive conditions than the ones usually offered in the market for this type of operation.

• *Banco do Brasil S.A. (Financing exportation ACC).* These operations presented attractive costs when compared to the average cost of Vale operations and costs with other players in the market and were according to the same evaluation criteria, price study and procedures that guide negotiations with third parties unrelated to Vale, regardless of value and characteristic. Under the decision making process of Vale, board members appointed by Litel did not receive documents or information related to this matter and did not participate in the decision.

• *Banco do Brasil S.A. (contract executed on 11/11/2015).* The Contract refers to the issuance of the Export Credit Note (NCE) in the amount of R$ 1.5 billion, for 7 years at 110% CDI per annum The NCE aims to reinforce the working capital of Vale, aiming to support production of assets to be exported, as well as supporting activities part and essential to the exportation. The proposal was selected upon analysis of other proposals under the same structure and was deemed as the most appropriate under the cost and term perspectives. The operation has attractive costs when compared to the average value of Vale operations. Under Vale s decision-making process, this contract was approved

by the executive Office, upon recommendation by the financial area of Vale. Consequently, the board members appointed by Litel Participações S.A. did not receive documents or information related to this matter and did not participate in the decision.

• *Ferrovia Centro Atlântica S.A*. (contract executed on 01/01/2015). The contract refers to the Agreement for Mutual Operating Use of Railroad Facilities, as Mutual Traffic Model and exchange of material between FCA and EFVM. Considering the origin and destination of cargo flows and competitiveness of the railroad model, this contract presented the best return.

• *Ferrovia Norte Sul S.A*. (contract executed on 01/01/2015). This is a Specific Operational Contract which main purposes are regulate specific operations in mutual traffic and/or right of passage and improve global operating efficiency for railroad transportation and offered the best conditions, compared to users in general, in order to allow improving railroad transportation between the Parties. Considering the origin and destination of cargo flows and competitiveness of the railroad model, this contract presented the best return.

• *Ferrovia Centro Atlântica S.A*. (contract executed on 7/24/2015). The contract refers to the sale of cargo railroad transportation services, by Ferrovia Centro Atlântica to Vale, of empty wagons (GDE), originating in Boa Vista Nova /SP to Costa Lacerda/MG. Considering the origin and destination of cargo flows and competitiveness of the railroad model, this contract presented the best return.

Table of Contents

17.1 Information about the capital stock

Class of capital	Date of authorization or approval	Value of the Capital (R$)	Deadline for payment	Number of common shares	Number of preferred shares	Total number of shares
Issued capital	9/May/2014	77,300,000,000.00		3,217,188,402	2,027,127,718	5,244,316,120

Capital stock by class of share		Other securities convertible into shares and conditions for conversion
Class of preferred share	Number of shares	Denomination
Preferred Class A	2,027,127,706	
Preferred Class E	12	

Class of capital					
Subscribed capital	9/May/2014	77,300,000,000.00		3,217,188,402	2,027,127,718	5,244,316,120

Capital stock by class of share		Other securities convertible into shares and conditions for conversion
Class of preferred share	Number of shares	Denomination
Preferred Class A	2,027,127, 706	
Preferred Class E	12	

Class of capital					
Paid-in capital	9/May/2014	77,300,000,000.00		3,217,188,402	2,027,127,718	5,244,316,120

Capital stock by class of share		Other securities convertible into shares and conditions for conversion
Class of preferred share	Number of shares	Denomination
Preferred Class A	2,027,127,706	
Preferred Class E	12	

Table of Contents

Class of capital	Authorized capital			
30/Aug/2007	0.00	3,600,000,000	7,200,000,000	10,800,000,000

Capital stock by class of share		Other securities convertible into shares and conditions for conversion
Class of preferred share	Number of shares (Units)	Denomination
Preferred class A	7,200,000,000	

Table of Contents

17.2 Increases in the capital stock

Resolution date	Corporate body that ruled the increase	Issue date	Total amount of the issue (R$)	Type of increase	Common shares (number)	Preferred shares (number)	Total shares (number)	Subscription / Previous capital	Issue price	Quote factor
9/May/2014	Shareholders Meeting		2,300,000,000.00	Without issue of shares	0	0	0	0.00000000	0.00	R$ per Unit
Criteria for determining the value of the issue										
Type of payment										

Table of Contents

17.3 Information on stock splits, reverse splits, and stock bonuses

Justification for not giving information on this item:

There were no stock splits, reverse splits, or bonuses in the last three fiscal years.

17.4 Information on reductions in the capital stock

Justification for not giving information on this item:

There was no reduction in the capital stock of the company in the last three fiscal years.

17.5 Other relevant information

There is no relevant information that has not yet been disclosed in the items above.

18.1. Share rights

Share types or CDA	**Common**
Tag along	80.000000
Dividend Rights	Under Vale s Bylaws and the applicable legislation, owners of common shares will have the right to receive dividends proportionate to their interest in the capital stock, after distribution of dividends to holders of preferred shares. According to Article 44 of Vale s Bylaws, at least 25% of the annual net profits, adjusted under the law, will be assigned to the payment of the mandatory dividend to all Vale s shareholders.
Voting rights	Full
Convertibility	No
Right to reimbursement of capital	Yes
Description of the characteristics of the reimbursement of capital	Shareholders who hold common shares will have the right to the reimbursement of the value of their shares according to the provisions set forth in the applicable law, according to the terms and conditions established.
Restrictions regarding outstanding shares	No

Circumstances where guaranteed rights of said securities may be altered	Rights guaranteed to common shares that are not determined by the applicable law may be altered by means of an amendment of the Bylaws, approved at the Extraordinary General Meeting that can only be held in the 1st instance, with the presence of the shareholders representing at least 2/3 of the voting capital, and in a second instance with any number of shareholders present. Changes shall be approved based on quorums and conditions set forth by the Law of Joint Stock Company. It is also stressed that in accordance with article 7 of the bylaws, special class preferred shares shall have the right of veto over any modification of rights assigned to types and classes of shares issued by the Company, as well as any modification of article 7, or any other rights granted by the bylaws to special class preferred shares.
Possibility of Redemption	There are no specific statutory provisions for the investment of profits or reserves on share redemptions or amortization.

Table of Contents

Other Relevant Characteristics	There are no restrictions regarding outstanding common shares issued by Vale. For information about restrictions to Vale s stock trading by the involved individuals, see description of the Company s Negotiation Policy in item 20 on this Reference Form. All other characteristics of common shares issued by the Company that we believe are relevant were described on items above.

Table of Contents

Share types or CDA	**Preferred**
Class of preferred shares	Class A Preferred
Tag along	0.0000000
Dividend rights	Class A preferred shares have the following rights: a) priority in receiving dividends, to be calculated in the form of Company bylaws, corresponding to (i) at least 3% of the net worth of the share based on the Financial Statements that served as a reference for the payment of dividends or (ii) 6% calculated on the part of the capital formed by each class of share, whichever of them is greater; (ii) the right to participate in profit sharing on equal terms with the common shares, once these have been guaranteed a dividend equal to the minimum priority; and (iii) participation in any premiums, on equal terms with the common shares, maintaining the priority for the distribution of dividends. According to the Vale Bylaws, at least 25% of the annual net profits, adjusted under the law, will be assigned to the payment of the mandatory dividend to the company s shareholders.
Voting rights	Restricted.
Description of restricted vote	Preferred shares class A will have the same political rights as the common shares, with the exception of voting for the election of members of the Board of Directors, with the qualification set forth in §§ 2 and 3 of article 11 of the Company bylaws, as well as the right to elect and dismiss a member of the Supervisory Board and his Deputy. Preferred shares will exercise full and unrestricted right to vote if the Company no longer pays, for a period of three (3) consecutive financial years, the minimum dividends assured to holders of preferred shares, to which they have a right under the terms above.
Convertibility	No
Right to reimbursement of capital	No
Restrictions regarding outstanding shares	No
Circumstances where guaranteed rights of said securities may be altered	The rights guaranteed to the class A preferred shares that are not legal may be altered by means of an amendment of the bylaws, approved at the General Meeting that can only be held in the 1st instance, with shareholders representing at least 2/3 of the voting capital, and the 2nd instance with any number of shareholders present. Changes shall be approved based on quorums and conditions set forth by the Law of Corporations. The effectiveness of the decision will depend on the prior approval or ratification within one year, without the possibility of extending this period, by holders of more than half of each class of preferred shares whose rights would be impaired, meeting at extraordinary meeting. It is also stressed that in accordance with article 7 of the bylaws, special class preferred shares shall have the right of veto over any modification of rights assigned to types and classes of shares issued by Vale, as well as change of article 7 itself, or of other rights assigned to special class shares.
Possibility of Redemption	There are no specific statutory provisions for the investment of profits or reserves on share redemptions or amortization.
Other Relevant Characteristics	There are no restrictions regarding outstanding class A preferred shares issued by the Company. For information about restrictions to the Vale s stock negotiations by the involved individuals, see description of the Company s Negotiation Policy in item 20 on this Reference Form. All the characteristics of the class A preferred shares that the Company believes are relevant were described above.

Table of Contents

Share types or CDA	**Preferred**
Class of preferred shares	Class E Preferred
Tag along	0.0000000
Dividend rights	Special class preferred shares (golden shares) have the following rights: a) priority in receiving dividends, to be calculated in the form of the Company s bylaws, corresponding to (i) at least 3% of the net worth of the share based on the Financial Statements that served as a reference for the payment of dividends or (ii) 6% calculated on the part of the capital formed by each class of share, whichever of them is greater; (ii) the participation in profit sharing on equal terms with the common shares, once these have been guaranteed a dividend equal to the minimum priority; and (iii) participation in any premiums, on equal terms with the common shares, maintaining the priority established for the distribution of dividends. According to the Company s Bylaws, at least 25% of the annual net profits, adjusted under the law, will be assigned to the payment of the mandatory dividend to the company s shareholders.
Voting rights	Restricted
Description of restricted vote	The special class preferred shares (golden shares) have the same political rights as common shares, with the exception of voting for the election of members of the board of directors, with the qualification set out in §§ 2 and 3 of article 11 of the Company Bylaws, as well as the right to elect a member of the Supervisory Board and his Deputy. Golden shares also have a right to veto on the following subjects: (I) change in corporate name; (ii) change of headquarters; (iii) change in statutory purpose regarding mining activities; (iv) liquidation of the company; (v) transfer or closing of the activities of any or all of the following stages of the company s integrated system of iron ore: (i) mineral deposits, reservoirs. mines; (ii) railroads; (iii) ports and maritime terminals; (vi) any modification of rights assigned to types and classes of shares set forth in the bylaws; and (vii) any amendment to article 7, or any rights granted to special class shares in the Bylaws.
Convertibility	No
Right to reimbursement of capital	No
Restrictions regarding outstanding shares	Yes
Description of Restriction	Special class preferred shares belong exclusively to the Union.
Circumstances where guaranteed rights of said securities may be altered	The rights guaranteed to preferred shares that are not determined by the applicable law may be altered by means of an amendment of the bylaws, and approved at the extraordinary General Meeting that can only be held in the 1st instance, with the presence of shareholders representing at least 2/3 of the voting capital, and the 2nd instance with any number of shareholders present. Changes shall be approved based on quorums and conditions set forth by the Law of Joint Stock Company. It is also stressed that in accordance with article 7 of the bylaws, special class preferred shares shall have the right of veto over any modification of rights assigned to types and classes of shares issued by Vale, as well as any change of article 7 itself, or of other rights assigned to special class shares.
Possibility of Redemption	There are no specific statutory provisions for the investment of profits or reserves on share redemptions or amortization.
Other Relevant Characteristics	All the other characteristics of the special class preferred shares that the Company believes are relevant were described above.

Table of Contents

18.2 Description of eventual statutory regulations which limit the right to vote of large shareholders or which cause them to hold a public offering

There are no statutory regulations, which limit the right to vote of large shareholders or which cause them to hold a public offering.

Table of Contents

18.3 Description of exceptions and suspensive clauses relative to ownership or political rights set forth in the bylaws

There are no exceptions or suspensive clauses relative to ownership or political rights set forth in the Company s bylaws.

Table of Contents

18.4 Volume of trading, daily average and minimum and maximum prices for securities traded

Fiscal Year 12/31/2015

Quarter	Securities	Kind	Class	Market	Administrative Entity	Traded Financial Volume (Reais)	Highest Price Listed (R$)	Lowest Price Listed (R$)	Lowest Price Listed (R$)	Price Lis Facto
03/31/2015	Shares	Common		Stock Exchange	BM&FBOVESPA S.A. - Bolsa de Valores, Mercadorias e Futuros	7,582,885,511.00	20.54	23.13	17.65	R$ per Unit
06/30/2015	Shares	Common		Stock Exchange	BM&FBOVESPA S.A. - Bolsa de Valores, Mercadorias e Futuros	9,610,690,988.00	20.69	27.89	17.17	R$ per Unit
09/30/2015	Shares	Common		Stock Exchange	BM&FBOVESPA S.A. - Bolsa de Valores, Mercadorias e Futuros	8,037,342,035.00	18.06	20.56	14.77	R$ per Unit
12/31/2015	Shares	Common		Stock Exchange	BM&FBOVESPA S.A. - Bolsa de Valores, Mercadorias e Futuros	6,022,903,782.00	16.11	20.83	11.25	R$ per Unit
03/31/2015	Shares	Preferred	PNA	Stock Exchange	BM&FBOVESPA S.A. - Bolsa de Valores, Mercadorias e Futuros	18,579,281,199.00	17.93	20.32	15.40	R$ per Unit
06/30/2015	Shares	Preferred	PNA	Stock Exchange	BM&FBOVESPA S.A. - Bolsa de Valores, Mercadorias e Futuros	26,465,843,826.00	17.02	21.10	14.70	R$ per Unit
09/30/2015	Shares	Preferred	PNA	Stock Exchange	BM&FBOVESPA S.A. - Bolsa de Valores, Mercadorias e Futuros	21,431,151,294.00	14.58	16.37	11.89	R$ per Unit
12/31/2015	Shares	Preferred	PNA	Stock Exchange	BM&FBOVESPA S.A. - Bolsa de Valores, Mercadorias e Futuros	16,294,248,139.00	13.03	16.35	9.08	R$ per Unit

Fiscal Year 12/31/2014

Quarter	Securities	Type	Class	Market	Administrative entity	Traded Financial Volume (R$)	Average Daily Price Rate (R$)	Highest Price Listed (R$)	Lowest Price Listed (R$)	Lowest Price Listed (R$)
03/31/2014	**Shares**	Common		Stock Exchange	BM&FBOVESPA S.A. - Bolsa Valores, Mercadorias e Futuros	10,230,723,387.00	32.27	36.05	29.08	R$ per unit
06/30/2014	**Shares**	Common		Stock Exchange	BM&FBOVESPA S.A. - Bolsa Valores, Mercadorias e Futuros	7,204,624,269.00	30.47	34.44	28.21	R$ per unit
09/30/2014	**Shares**	Common		Stock Exchange	BM&FBOVESPA S.A. - Bolsa Valores, Mercadorias e Futuros	8,611,370,533.00	30.22	33.25	26.14	R$ per unit
12/31/2014	**Shares**	Common		Stock Exchange	BM&FBOVESPA S.A. - Bolsa Valores, Mercadorias e Futuros	9,459,888,182.00	24.38	28.74	18.20	R$ per unit
03/31/2014	**Shares**	Preferred	PNA	Stock Exchange	BM&FBOVESPA S.A. - Bolsa Valores, Mercadorias e Futuros	28,070,167,554.00	29.00	32.88	25.65	R$ per unit

Table of Contents

06/30/2014	**Shares**	Preferred	PNA	Stock Exchange	BM&FBOVESPA S.A. - Bolsa Valores, Mercadorias e Futuros	23.253.355.623,00	27.53	30.87	25.27	R$ per unit
09/30/2014	**Shares**	Preferred	PNA	Stock Exchange	BM&FBOVESPA S.A. - Bolsa Valores, Mercadorias e Futuros	24,789,060,124.00	26.90	29.66	22.99	R$ per unit
12/31/2014	**Shares**	Preferred	PNA	Stock Exchange	BM&FBOVESPA S.A. - Bolsa Valores, Mercadorias e Futuros	20.284.258.142,00	21,09	25.00	15.50	R$ per unit

Fiscal Year 12/31/2013

Quarter	Securities	Type	Class	Market	Administrative entity	Traded Financial Volume (R$)	Average Daily Price Rate (R$)	Highest Price Listed (R$)	Lowest Price Listed (R$)	Lowest Price Listed (R$)
03/31/2013	**Shares**	Common		Stock Exchange	BM&FBOVESPA S.A. - Bolsa Valores, Mercadorias e Futuros	8,531,415,055.00	38.16	44,76	33.50	R$ per unit
06/30/2013	**Shares**	Common		Stock Exchange	BM&FBOVESPA S.A. - Bolsa Valores, Mercadorias e Futuros	10,620,079,739.00	32.60	36,81	28.23	R$ per unit
09/30/2013	**Shares**	Common		Stock Exchange	BM&FBOVESPA S.A. - Bolsa Valores, Mercadorias e Futuros	10,432,544,884.00	33.89	38,31	27.89	R$ per unit
12/31/2013	**Shares**	Common		Stock Exchange	BM&FBOVESPA S.A. - Bolsa Valores, Mercadorias e Futuros	10,172,676,804.00	35.27	38,93	32.82	R$ per unit
03/31/2013	**Shares**	Preferred	PNA	Stock Exchange	BM&FBOVESPA S.A. - Bolsa Valores, Mercadorias e Futuros	38,987,960,915.00	36.64	43,09	32.29	R$ per unit
06/30/2013	**Shares**	Preferred	PNA	Stock Exchange	BM&FBOVESPA S.A. - Bolsa Valores, Mercadorias e Futuros	44,113,714,14100	30.90	34,79	26.44	R$ per unit
09/30/2013	**Shares**	Preferred	PNA	Stock Exchange	BM&FBOVESPA S.A. - Bolsa	42,464,099,772.00	30.42	33,95	25.52	R$ per unit

				Valores, Mercadorias e Futuros						
12/31/2013	**Shares**	Preferred PNA	Stock Exchange	BM&FBOVESPA S.A. - Bolsa Valores, Mercadorias e Futuros	30,750,305,719.00	32.32	34,65	30.30	R$ per unit	

Table of Contents

18.5 Description of other securities issued in Brazil

Security	**Debentures**
Identification of security	Private Debentures
Issuing date	08/19/2015
Quantity (Units)	3,000
Total value (Reais)	3,000,000,000.00
Restriction to outstanding units	No
Outstanding Debt Balance at the end of the last fiscal year	R$ 3,172,357,443.72
Convertibility	No
Possibility of redemption	Vale may, starting on the 12th month, from the issuing date, pay early, total, or partial debentures free of any fees or premiums.
Characteristics of Securities	Simple, nominative and unsecured, single series, debentures with moratorium interest of 101% of the accrued DI Tax rate with maturity on August 19, 2021.
Conditions to alter rights assured by the securities	Any change in the conditions of the debentures shall depend on the approval of the debenture holders that represent at least half of the current debentures.
Other relevant characteristics	Maturity: August 19, 2021.

Main Early Maturity Events: Debentures may be declared matured in the following events: I. default of monetary obligation due to the debenture holder as provided in the Deed, not remedied in 30 business days starting on the date of default; II. default of material obligation provided for in the Deed, no remedied within 30 business days from the date the notice of noncompliance is delivered by the debenture holder; III. Declaration of judicial recovery or submission to any creditor or class of creditors of a request for renegotiation of the extrajudicial recovery plan, formulated by Vale; IV. Termination, liquidation, dissolution, bankruptcy, application for Vale s voluntary or involuntary bankruptcy; V. reduction of Vale s share capital, without prior consent from debenture holder; VI. Accelerated maturity of any financial obligations that are subject to Vale, in the local or international markets at an individual amount greater than R$ 500,000,000 R$ .00; and, VII. Corporate restructuring, including incorporation (in cases where Vale is incorporated), merger or divestiture of Vale, without prior consent from debenture holder.

Interest 101% of the DI Fee

Warranty: None.

When there are no warranties, if credit is unsecured or subordinate: Unsecured.

Restrictions on issuer regarding:

- dividend distribution: None.

Table of Contents

- disposal of certain assets: None.
- contracting of new debt: None.
- issuing of new securities: None.
- corporate transactions involving the issuer, parent companies or subsidiaries: early maturity shall apply in the event of any corporate restructuring, including incorporation (in cases where Vale is incorporated), merger or divestiture of the Issuer, without the prior consent from debenture holders.

Fiduciary Agent: None.

Securities	**Debentures 9th Issue**
Identification of the securities	Debentures
Issuing Date	15/08/2015
Quantity (Units)	1.000.000
Global face value (Real)	R$ 1,350,000,000 .00
Restriction to outstanding units	No
Outstanding Debt Balance at the end of the last fiscal year	R$ 1,416,777,001.05
Convertibility	No
Possibility of redemption	If early redemption of the debentures is not legally allowed by the applicable law or by the National Monetary Council s regulation of redemption provided for in Act # 12.431, the Company may, at its sole discretion, conduct optional, total or partial, early redemption offering of outstanding debentures, in general or by series, with the cancellation of such Debentures that will be addressed to all the debenture holders on equal terms.
Characteristics of securities	simple, nominative and registered, unsecured debentures, in 2 series: (i) the first series consists of 800,000 debentures, IPCA adjusted at an interest rate of 6.6232% y.y. and maturity on 8/15/2020; (ii) the second series consists of 550,000 debentures, IPCA adjusted at an interest rate of 6.6252% y.y. and maturity on 8/15/2022.

Main Automatic Early Maturity Events: I. default of monetary obligation due to debenture holders under the Debenture Deed, not remedied within 2 business days from the date of default; II. any type of full or partial transfer or promise of transfer to third parties, by the company, of any of its obligations under the Deed, unless previously authorized by debenture holders representing at least 90% of the outstanding debentures; III. liquidation, dissolution or termination of the Company, except in the event of liquidation, dissolution and/or termination of a

non-default deal, pursuant to item (VII) of Non-Automatic Early Maturity ; and other provisions set forth in the Debenture Deed.

Table of Contents

Main Non-Automatic Early Maturity Events: I. default by the company of any non-monetary obligation set forth in the Debenture Deed, not remedied within 60 days from the date of default, unless there are specific remediation deadlines of deadlines for any other events of default (as set forth in the Deed of Debenture); II. reduction of the Company s share capital, unless previously authorized by debenture holders representing at least the majority of the outstanding debentures; III. amendment of the Company s corporate purpose provided that, as a result, the company no longer engages in mining activities; IV. proof of any of the statements made by the company in the Deed of Debenture is false or incorrect in any relevant aspect; V. default by the Company or Relevant Subsidiary, which is not remedied, of any contract, instrument or document showing evidence of outstanding debt (as defined in the Deed of Debenture) greater than or equal to R$ 250,000,000.00, annually adjusted by IGP-M INDEX, or its equivalent in other currencies, provided that such default results in accelerated maturity of said Debt; VI. involuntary bankruptcy of the Company and/or any relevant subsidiary(as defined in the Deed of Debenture); (b) voluntary bankruptcy by the company and/or any relevant subsidiary; (c) voluntary bankruptcy by the company and/or any relevant subsidiary filed by third parties, not elided in the legal deadline; or (d) request for judicial or extrajudicial recovery of the Company and/or any relevant subsidiary, regardless of decision on the respective request and other provisions set forth in the Deed of Debentures.

Restrictions on issuer regarding:

- dividend distribution: None.

- disposal of certain assets: The Valley may not dispose of all or nearly all of its assets or mining properties, unless (a) previously authorized by debenture holders representing at least the majority of outstanding debentures; or (b) if the redemption of debenture is guaranteed to debenture holders who so wish to have them, according to the terms of the Deed of Debentures that they hold or, (c) if all requirements set forth in the

Deed of Debentures have been met, requirements that include, but are not limited to, the agreement and fulfillment of all obligations set forth in the Deed of Debentures by the company receiving the assets to contracting new debt: None.

- issuing of new securities: None.

- corporate deals involving the issuer, their parent companies or subsidiaries: acceleration:
(a) reduction of the Company s share capital, unless previously authorized by the debenture holders,
(b) changes in the Company s corporate format from a joint-stock company to a limited company,
(c) divestiture, merger, incorporation (only when the Company is incorporated) or share incorporation (only when shares issued by the company are incorporated) of

Table of Contents

	the Company, except upon approval of debenture holders or pursuant to the Deed of Debenture; (d) amendment of the Company s corporate purpose provided that, as a result, the Company no longer engages in mining activities.
	Fiduciary Agent: Pentágono S.A. Distribuidora de Títulos e Valores Mobiliários. Major contractual obligations: (i) to monitor the mandatory information provided, warning debenture holders about any omissions or inaccuracies contained in such information; (ii) to issue opinion on the sufficiency of information about proposals to amend the terms of the debentures; (iii) to request, when required, extraordinary audit of the Company; and, (iv) when required, to call a general meeting of debenture holders..
Conditions to alter rights assured by the securities	Any amendments to the main terms of the debentures shall be contingent on approval by debenture holders representing at least 90% of the outstanding debentures.
Other relevant characteristics	The Company offered debentures in Brazil, pursuant to Instruction CVM 400.
Security	**Debentures 8th Issuance**
Identification of security	Debentures
Issuing date	1/15/2014
Quantity (Units)	1,000,000
Global face value (Reais)	R$1,000,000,000.00
Restriction to outstanding units	No
Outstanding Debt Balance at the end of the last fiscal year	R$ 1,239,550,228.36
Convertibility	No
Possibility of redemption	If early redemption is legally permitted for Debentures, under the terms of applicable legislation, including under the regulation by the National Monetary Council applicable to the redemption possibility provided for in Law 12.431, the Company may, at its sole discretion, present an optional offer for early redemption, in total or partial, for outstanding Debentures, in general or per series, with cancellation of such Debentures, to be addressed to all Debenture-holders, under equal conditions.
Characteristics of securities	Simple, nominal, and book debentures, with no guarantees, in 4 series, where: (i) the 1st series is comprised of 600,000 debentures, adjusted by the IPCA, with interest rate at 6.46% per year and maturity on 1/15/2021; (ii) the 2nd series is comprised of 150,000 debentures, adjusted by the IPCA, with interest rate at 6.57% per year and maturity on 1/15/2024; (iii) the 3rd series is comprised of 100,000 debentures adjusted by the IPCA, with interest rate at 6.71% per year and maturity on 1/15/2026; and (iv) the 4th series is comprised of 150,000 debentures, adjusted by the IPCA, with interest rate at 6.78% per year and maturity on 1/15/2029.
	Main Events Related to Automatic Early Maturity: I. default related to monetary obligation due to the Debenture holder under the terms in the Deed of Issuance, which is not solved within two

661

Table of Contents

working days from the date of default; II. any type of assignment or promise of assignment to third parties, by the Company, of any of its obligations set forth in the Deed of Issuance, as a whole or in part, except upon prior authorization by the Debenture holders representing at least 90% of the outstanding Debentures; III. liquidation, dissolution and/or extinction of the Company, except when the liquidation, dissolution and/or extinction is result of an operation that is not a Default Event, under the terms permitted by item VII in Events Related to Non-Automatic Early Maturity ; and other circumstances provided for in the Deed of Issuance.

Main Events Related to Non-Automatic Early Maturity: I. default by the Company related to non-monetary obligation provided for in the Deed of Issuance, which is not solved within 60 days from the date of default, except when there is a specific term for cure or for any of the other Default Events (as defined in the Deed of Issuance); II. reduction of the Company capital stock, except upon prior authorization by Debenture holders representing at least the majority of outstanding Debentures; III. change to the Company corporate purpose, provided that, consequently, the Company is no longer engaged in mining activities; IV. evidence that any of the Statements made by the Company in the Deed of Issuance is false or inaccurate in any relevant aspect; V. default by the Company or Relevant Subsidiary, which is not solved, in any contract, instrument, or document, evidencing outstanding Indebtedness (as defined in the Deed of Issuance), in amount equal or higher than R$250,000,000.00, updated annually based on IGPM, or equivalent in other currency, provided that such default results in the effective early maturity of such Indebtedness;

VI. bankruptcy of the Company and/or any relevant subsidiary (as defined in the Deed of Debenture); (b) voluntary bankruptcy of the Company and/or any relevant subsidiary; (c) involuntary bankruptcy of the Company and/or any relevant subsidiary, filed by third parties, not elided in the legal deadline; or (d) request for judicial or extrajudicial recovery by the company and/or any relevant subsidiary, not contingent on approval of the respective request, and other provisions set forth in the Deed of Debentures.

Restrictions on issuer regarding:

- dividend distribution: None.

- disposal of certain assets: Vale may not dispose of all or nearly all of its assets or mining properties, unless (a) previously authorized by debenture holders representing at least the majority of outstanding debentures; or (b) if the redemption of debenture is guaranteed to debenture holders who wish to redeem

them, according to the terms of the Deed of Debentures that they hold; or, (c) if all requirements set forth in the Deed of Debentures have been met, requirements that include, but are not limited to, the agreement and fulfillment of all obligations set forth in the Deed of Debentures by the company receiving the assets to contracting new debt: None.

Table of Contents

	• issuing of new securities: None.
	corporate deals involving the issuer, their parent companies or subsidiaries: acceleration: (a) reduction of the Company s share capital, unless previously authorized by the debenture holders, (b) changes in the Company s corporate format from a joint-stock company to a limited company, (c) divestiture, merger, incorporation (only when the Company is incorporated) or share incorporation (only when shares issued by the company are incorporated) of the Company, except upon approval of debenture holders or pursuant to the Deed of Debenture; (d) amendment of the Company s corporate purpose provided that, as a result, the Company no longer engages in mining activities.
	Fiduciary Agent: Pentágono S.A. Distribuidora de Títulos e Valores Mobiliários. Main contractual obligations: (i) accompany the frequency in the submission of mandatory information, alerting the Debenture holders about possible omissions or inaccuracies in such information; (ii) issue opinion on the sufficiency of information in the proposals to alter the Debenture terms; (iii) request, when needed, extraordinary audits at the Company; and (iv) call, when needed, the General Meeting of Debenture holders.
Conditions to alter rights assured by the securities	Any changes to key debenture terms will be subject to approval by debenture holders representing at least 90% of outstanding debentures.
Other relevant characteristics	Debentures were subject to takeover carried out by the Company in Brazil, under the terms in CVM Instruction 400.
Securities	**Debentures**
Identification of securities	Participatory Debentures (CVRDA6, CVRDB6, CVRDC6, CVRDD6)
Issuing Date	08/07/1997
Quantity (Units)	388.559.056
Global face value (Real)	3.885.590,56
Restriction to outstanding units	No
Outstanding debt balance at the end of the last fiscal year	R$ 1,335,844,663 .78
Convertibility	No
Possibility of Redemption	No
Characteristics of securities	Single series. Registered Nominative Debenture Updating of the face value according to the IGP-M rate. The participatory debentures are traded on the secondary market at the National System of Debentures (SND, Portuguese acronym), managed by the National Association of Open Market Institutions (ANDIMA, Portuguese acronym), and operated by CETIP since October 2002. The CETIP debenture codes are CVRDA6, CVRDB6, CVRDC6 and CVRDD6. The debentures ISIN number is BRVALEDBS028.
Conditions for amendment to rights secured by such securities	Any amendments to the main terms of the debentures shall be contingent on approval by debenture holders representing the

Table of Contents

	absolute majority of outstanding debentures. Debentures shall be matured in the event of extinction of all mining rights that are the purpose of the Deed, including extinction due to depletion of the described mineral reserves or mineral reserves that replace them. In such case, the Issuer (Vale) shall liquidate the outstanding debentures in circulation at the face value updated pursuant to the provisions set forth in the Deed, without premium.
Other relevant characteristics	*Maturity*: the debenture shall be matured in the event of full extinction of the mining rights that are the purpose of the Deed. *Main Automatic Early Maturity Events*: The Fiduciary Agent may declare the early maturity of the obligations set forth in the deed, without warning, notice, or judicial or extrajudicial summons, ant it may demand the immediate settlement, by Vale, of the face value of the debentures, in the case of Vale s bankruptcy. *Main Non-Automatic Early Maturity Events*: Vale may not, totally or partially, redeem the debentures. *Premium*: Premium shall apply the net revenue relative to each mineral product: (i) Iron Ore-1.8%, (ii) Gold and Copper and Byproducts-2.5%, and, (iii) other minerals-1%. Premium due to debenture holders shall be paid biannually, on March 31 and September 30 of each year. *Interest* The face value of debentures shall be from the date they are issued based on General Price Index IGP-M rate. *Warranty*: None. *When there are no warranties, if credit is unsecured or subordinate*: Subordinate, pursuant to paragraph 4 of article 58 of Act

6.404/76.

Restrictions on issuer regarding:

- dividend distribution: None.
- disposal of certain assets: None.
- contracting of new debt: None.
- issuing of new securities: None.
- corporate deals involving the issuer, their parent companies or subsidiaries: None.

Fiduciary Agent: GDC Partners Serviços Fiduciários DTVM Ltda. The main contractual obligation of the fiduciary agent is to call a general meeting of debenture holders, when necessary.

Securities	**Debentures BNDESPAR 1st Issue**
Quantity	66.510
Global face value	R$ 665,100,000 .00
Outstanding debt balance at the end	R$ 679,716,469.12

Table of Contents

of the last fiscal year	
Issuing Date	17/12/2007
Restrictions to outstanding units	None.
Convertibility into shares or granting the right to subscribe or acquire issuer shares	None.

Possibility of Redemption

I. Possibility of redemption:

Vale shall pay early redemption of all outstanding debentures (and nothing less) within 30 days from following events:

a) extinction of the concession contract entered into by Valec Engenharia, Construções e Ferrovias S.A, a state-owned company, established as a joint-stock corporation under the Ministry of Transport, and FNS,for the management and operation of the public service of railway cargo transportation in Ferrovia Norte e Sul - FNS, due to forfeiture, expropriation, termination, agreement between the parties, concession or sub-concession annulment or declaration of nullity of administrative bidding process; and,

b) intervention, by the concession grantor, in the sub-concession or concession for the management and operation of the public service of railway cargo transportation in Ferrovia Norte e Sul - FNS granted to FNS.

II. Formula for calculating value of redemption

On the payment date of redemption, Vale shall settle debentures still circulating at their non-amortized unit face value, plus the amount capitalized but not amortized, as well as monetary interest capitalized semi-annually on the 15th of June and December each year with a grace period of 4 years counted from the issuing date and still not amortized, plus remuneration in the amount of 0.8% per year above the TJLP (long-term interest rate), liable until such (Value of Redemption).

The Value of Redemption shall be increased by a percentage of 20% if (i) the termination of letter a above results from the expiration of

	the concession or sub-concession (ii) when the annulment of the aforementioned concession or sub-concession is attributable, pursuant to the administrative proceedings, to Vale Logística or to FNS.
Characteristics of the Debentures	Debentures issued by Vale SA, privately, and which have been fully subscribed by BNDES Participações S.A. The operation is aimed at financing the expansion project of Ferrovia Norte Sul.

I. Maturity Date: 12/17/2027

Table of Contents

II. Early Maturity: In addition to the assumptions referred to in Articles 39, 40 and 47a of the Provisions Applicable to BNDES Agreements, the debenture holders may declare early maturity for all debentures and demand payment, from Vale, of the debt relative to the balance of the debentures, plus interest and other charges which are liable up to the date of payment, in the following events, among others:

(a) failure by Vale to fulfill any monetary obligation related to the debentures not remedied within 10 business days counting from their respective date of maturity;

(b) Vale bankruptcy filed by third parties and not suppressed by Vale within the legal period, request for judicial or extrajudicial recovery made by Vale or, still, Vale s voluntary bankruptcy;

(c) dissolution and liquidation of VALE;

(d) failure to correct any default of any non-monetary obligation as provided in the Deed, within 45 days;

(f) declaration of acceleration of any debt of Vale by reason of breach of contract in whose individual amount is equal to or greater than R$ 125,000,000.00 or whose added value, in a period of 12 consecutive months is equal to od greater than R$ 1,000,000,000.00. The amount in this item shall be updated monthly counting from the Issuing Date based on the General Price Index-Market rate issued by Fundação Getúlio Vargas (IGPM);

f) inclusion of mechanisms in Vale articles of incorporation or bylaws requiring: (I) a special quorum for deliberation or approval of matters limiting or restricting the control of Vale by the respective controlling companies; (Ii) restrictions on the growth capacity of Vale or its technological development; (Iii) restrictions on Vale s access to new markets; or (iv) restrictions or loss of the ability to pay financial obligations under the Deed of Debenture;

g) finding that the statements made in the Deed, by Vale, in any relevant aspect, were false or misleading or even incorrect or incomplete on the date they were made;

h) changes to Vale s corporate purpose, unless previously approved by debentures holders representing the majority of debentures in circulation;

i) if Vale approves reductions in share capital with repayment to shareholders of part of the value of the shares or by decreasing their value, when not paid, to the amount of the input, without prior written approval by debenture holders representing a majority of DEBENTURES in circulations;

j) if (i) Vale s direct share control is in any way changed, unless previously approved by debentures holders representing the majority of outstanding debentures; or (ii) Vale s direct share control is

changed in noncompliance with the assumptions of changes in indirect control, without

Table of Contents

the prior written consent of debenture holders, Vale is committed to presenting, within two months counting from the date of said change, a surety letter, which shall be accepts are the debenture holders discretion;
k) Vale s non-compliance with obligation of not providing collateral to other creditors, without guarantee of equal quality to the issuing with equal priority of payment, unless previously approved by debenture holders representing a majority of the debentures in circulation;

l) if Vale does not use the proceeds from the issuance for the capitalization of FNS, within 3 business days of payment of the debentures; and

m) if Vale does redeem the debentures pursuant to the deadlines and terms set forth in the DEED.

n) if it does not provide, in the event that the levels established are not met, within 60 days from the date the written notification from BNDS is received, collateral accepted by BNDES, in the amount corresponding to at least 130% of the value of the debt, unless, within that period, the levels described below are restored:

• Adjusted EBITDA debt ratio less than or equal to 4.5 (noting that only relative to the calculations to be performed on the basis of financial results for the fiscal years 2015 and 2016, shall prevail the rate of 5.5); and,

• Adjusted EBITDA ratio of Interest Expense greater than or equal to 2.0.

III. Interest TJLP 0.8% per year

IV. Warranty: None.

V. When there are no warranties, if credit is unsecured or subordinate: Unsecured.

VI. Restrictions on issuer regarding:

- dividend distribution: None.

- disposal of certain assets: Vale may dispose of any assets if, at its discretion, this act is desirable to conduct its business and does not adversely affect Vale s ability to honor its obligations under the Deed.

- contracting of new debt: None.

- issuing of new securities: None.

- corporate deals involving the issuer, its parent companies or subsidiaries: fall under the events of early maturity listed in items (f), (h), (i) and (j) above.

VII. Fiduciary Agent: None.

Table of Contents

Conditions for amendment to rights secured by such securities	Any amendments to the terms of the issued debentures shall be contingent on approval by debenture holders representing at least 50% plus of debenture of the debentures in circulation. For the purposes of reaching a quorum, debentures belonging to Vale shall be excluded from the number of debentures.
Other relevant characteristics	VALE and BNDESPAR on June 23, 2015, amended the referred deed of debenture to exclude (i) the possibility of interchanging debentures in shares issued by VLI, and to exclude all obligations from VLI and FNS under said deed of debenture, freely granting to BNDESPAR purchase options for a certain number of common shares of issued by VLI and held by Vale.
Securities	**Debentures BNDESPAR 2nd Issue**
Quantity	38,520 debentures
Global face value	R$ 385,200,000.00
Outstanding debt balance at the end of the last fiscal year	R$ 399,674,528.93
Issuing Date	15/10/2009
Restrictions to outstanding units	None.
Convertibility into shares or granting the right to subscribe or acquire issuer shares	None.
Possibility of Redemption	I. Possibility of redemption: Vale shall pay early redemption of all outstanding debentures (and nothing less) within 30 days from following events: a) extinction of the concession contract entered into by Valec Engenharia, Construções e Ferrovias S.A, a state-owned company, established as a joint-stock corporation under the Ministry of Transport, and FNS,for the management and operation of the public service of railway cargo transportation in Ferrovia Norte e Sul - FNS, due to forfeiture, expropriation, termination, agreement between the parties, concession or sub-concession annulment or declaration of nullity of administrative bidding process; and, b) intervention, by the concession grantor, in the sub-concession or concession for the management and operation of the public service of railway cargo transportation in Ferrovia Norte e Sul - FNS granted to FNS.

II. Formula for calculating value of redemption

On the payment date of redemption, Vale shall settle debentures still circulating at their non-amortized unit face value, plus the amount capitalized but not amortized, as well as monetary interest capitalized semi-annually on the 15th

Table of Contents

	of June and December each year with a grace period of 4 years counted from the issuing date and still not amortized, plus remuneration in the amount of 0.8% per year above the TJLP (long-term interest rate), liable until such (Value of Redemption).
	The Value of Redemption shall be increased by a percentage of 20% (twenty per cent) if (i) the termination of letter a above results from the expiration of the concession or sub-concession (ii) when the annulment of the aforementioned concession or sub-concession is attributable, pursuant to the administrative proceedings, to Vale Logística or to FNS.
Characteristics of the Debentures	Debentures issued by Vale SA, privately, and which have been fully subscribed by BNDES Participações S.A. The operation is aimed at financing the expansion project of Ferrovia Norte Sul.
	II. Maturity Date: 12/17/2027
	II. Early Maturity: In addition to the assumptions referred to in Articles 39, 40 and 47a of the Provisions Applicable to BNDES Agreements, the debenture holders may declare early maturity for all debentures and demand payment, from Vale, of the debt relative to the balance of the debentures, plus interest and other charges which are liable up to the date of payment, in the following events, among others: (a) failure by Vale to fulfill any monetary obligation related to the debentures not remedied within 10 business days counting from their respective date of maturity; (b) Vale bankruptcy filed by third parties and not suppressed by Vale within the legal period, request for judicial or extrajudicial recovery made by Vale or, still, Vale s voluntary bankruptcy; (c) dissolution and liquidation of VALE; (d) failure to correct any default of any non-monetary obligation as provided in the Deed, within 45 days; (f) declaration of acceleration of any debt of Vale by reason of breach of contract in whose individual amount is equal to or greater than R$ 125,000,000.00 or whose added value, in a period of 12 consecutive months is equal to od greater than R$ 1,000,000,000.00. The amount in this item shall be updated monthly counting from the Issuing Date based on the General Price Index-Market rate issued by Fundação Getúlio Vargas (IGPM);

f) inclusion of mechanisms in Vale articles of incorporation or bylaws requiring: (I) a special quorum for deliberation or approval of matters limiting or restricting the control of Vale by the respective controlling companies; (Ii) restrictions on the growth capacity of Vale or its technological development; (Iii) restrictions on Vale s access to new markets; or (iv) restrictions or loss of the ability to pay financial obligations under the Deed of Debenture;

Table of Contents

g) finding that the statements made in the Deed, by Vale, in any relevant aspect, were false or misleading or even incorrect or incomplete on the date they were made;

h) changes to Vale s corporate purpose, unless previously approved by debentures holders representing the majority of debentures in circulation;

i) if Vale approves reductions in share capital with repayment to shareholders of part of the value of the shares or by decreasing their value, when not paid, to the amount of the input, without prior written approval by debenture holders representing a majority of DEBENTURES in circulations;

j) if (i) Vale s direct share control is in any way changed, unless previously approved by debentures holders representing the majority of outstanding debentures; or (ii) Vale s direct share control is changed in noncompliance with the assumptions of changes in indirect control, without the prior written consent of debenture holders, Vale is committed to presenting, within two months counting from the date of said change, a surety letter, which shall be accepts are the debenture holders discretion;

k) Vale s non-compliance with obligation of not providing collateral to other creditors, without guarantee of equal quality to the issuing with equal priority of payment, unless previously approved by debenture holders representing a majority of the debentures in circulation;

l) if Vale does not use the proceeds from the issuance for the capitalization of FNS, within 3 business days of payment of the debentures; and

m) if Vale does redeem the debentures pursuant to the deadlines and terms set forth in the DEED.

n) if it does not provide, in the event that the levels established are not met, within 60 days from the date the written notification from BNDS is received, collateral accepted by BNDES, in the amount corresponding to at least 130% of the value of the debt, unless, within that period, the levels described below are restored:

• Adjusted EBITDA debt ratio less than or equal to 4.5 (noting that only relative to the calculations to be performed on the basis of financial results for the fiscal years 2015 and 2016, shall prevail the rate of 5.5); and,

• Adjusted EBITDA ratio of Interest Expense greater than or equal to 2.0.

III. Interest TJLP 0.8% per year

IV. Warranty: None.

V. When there are no warranties, if credit is unsecured or subordinate: Unsecured.

VI. Restrictions on issuer regarding:

- dividend distribution: None.
- disposal of certain assets: Vale may dispose of any assets

Table of Contents

	if, at its discretion, this act is desirable to conduct its business and does not adversely affect Vale s ability to honor its obligations under the Deed. • contracting of new debt: None. • issuing of new securities: None. • corporate deals involving the issuer, its parent companies or subsidiaries: fall under the events of early maturity listed in items (f), (h), (i) and (j) above.
Conditions for amendment to rights secured by such securities	VII. Fiduciary Agent: None. Any amendments to the terms of the issued debentures shall be contingent on approval by debenture holders representing at least 50% plus of debenture of the debentures in circulation. For the purposes of reaching a quorum, debentures belonging to Vale shall be excluded from the number of debentures.
Other relevant characteristics	VALE and BNDESPAR on June 23, 2015, amended the referred deed of debenture to exclude (i) the possibility of interchanging debentures in shares issued by VLI, and to exclude all obligations from VLI and FNS under said deed of debenture, freely granting to BNDESPAR purchase options for a certain number of common shares of issued by VLI and held by Vale.
Securities	**Debentures BNDESPAR 3rd Issue**
Quantity	35,712 debentures
Global face value	R$ 357,120,000.00
Outstanding debt balance at the end of the last fiscal year	R$ 370,539,376.36
Issuing Date	09/06/2011
Restrictions to outstanding units	None.
Convertibility into shares or granting the right to subscribe or acquire issuer shares	None.
Possibility of Redemption	I. Possibility of redemption: Vale shall pay early redemption of all outstanding debentures (and nothing less) within 30 days from following events: a) extinction of the concession contract entered into by Valec Engenharia, Construções e Ferrovias S.A, a state-owned company, established as a joint-stock corporation under the Ministry of Transport, and FNS,for the management and operation of the public service of railway cargo transportation in Ferrovia Norte

e Sul - FNS, due to forfeiture, expropriation, termination, agreement between the parties, concession or sub-concession annulment or declaration of nullity of administrative bidding process; and,

b) intervention, by the concession grantor, in the sub-concession or concession for the management and

Table of Contents

operation of the public service of railway cargo transportation in Ferrovia Norte e Sul - FNS granted to FNS.

II. Formula for calculating value of redemption

On the payment date of redemption, Vale shall settle debentures still circulating at their non-amortized unit face value, plus the amount capitalized but not amortized, as well as monetary interest capitalized semi-annually on the 15th of June and December each year with a grace period of 4 years counted from the issuing date and still not amortized, plus remuneration in the amount of 0.8% per year above the TJLP (long-term interest rate), liable until such (Value of Redemption).

The Value of Redemption shall be increased by a percentage of 20% (twenty per cent) if (i) the termination of letter a above results from the expiration of the concession or sub-concession (ii) when the annulment of the aforementioned concession or sub-concession is attributable, pursuant to the administrative proceedings, to Vale Logística or to FNS.

Characteristics of the Debentures

Debentures issued by Vale SA, privately, and which have been fully subscribed by BNDES Participações S.A. The operation is aimed at financing the expansion project of Ferrovia Norte Sul.

III. Maturity Date: 12/17/2027

II. Early Maturity: In addition to the assumptions referred to in Articles 39, 40 and 47a of the Provisions Applicable to BNDES Agreements, the debenture holders may declare early maturity for all debentures and demand payment, from Vale, of the debt relative to the balance of the debentures, plus interest and other charges which are liable up to the date of payment, in the following events, among others:

(a) failure by Vale to fulfill any monetary obligation related to the debentures not remedied within 10 business days counting from their respective date of maturity;

(b) Vale bankruptcy filed by third parties and not suppressed by Vale within the legal period, request for judicial or extrajudicial recovery made by Vale or, still, Vale s voluntary bankruptcy;

(c) dissolution and liquidation of VALE;

(d) failure to correct any default of any non-monetary obligation as provided in the Deed, within 45 days;

(f) declaration of acceleration of any debt of Vale by reason of breach of contract in whose individual amount is equal to or greater than R$ 125,000,000.00 or whose added value, in a period of 12 consecutive months is equal to od greater than R$ 1,000,000,000.00. The amount in this item shall be updated monthly counting from the Issuing Date based on the General Price Index-Market rate issued by Fundação Getúlio Vargas (IGPM);

Table of Contents

f) inclusion of mechanisms in Vale articles of incorporation or bylaws requiring: (I) a special quorum for deliberation or approval of matters limiting or restricting the control of Vale by the respective controlling companies; (Ii) restrictions on the growth capacity of Vale or its technological development; (Iii) restrictions on Vale s access to new markets; or (iv) restrictions or loss of the ability to pay financial obligations under the Deed of Debenture;

g) finding that the statements made in the Deed, by Vale, in any relevant aspect, were false or misleading or even incorrect or incomplete on the date they were made;

h) changes to Vale s corporate purpose, unless previously approved by debentures holders representing the majority of debentures in circulation;

i) if Vale approves reductions in share capital with repayment to shareholders of part of the value of the shares or by decreasing their value, when not paid, to the amount of the input, without prior written approval by debenture holders representing a majority of DEBENTURES in circulations;

j) if (i) Vale s direct share control is in any way changed, unless previously approved by debentures holders representing the majority of outstanding debentures; or (ii) Vale s direct share control is changed in noncompliance with the assumptions of changes in indirect control, without the prior written consent of debenture holders, Vale is committed to presenting, within two months counting from the date of said change, a surety letter, which shall be accepts are the debenture holders discretion;

k) Vale s non-compliance with obligation of not providing collateral to other creditors, without guarantee of equal quality to the issuing with equal priority of payment, unless previously approved by debenture holders representing a majority of the debentures in circulation;

l) if Vale does not use the proceeds from the issuance for the capitalization of FNS, within 3 business days of payment of the debentures; and

m) if Vale does redeem the debentures pursuant to the deadlines and terms set forth in the DEED.

n) if it does not provide, in the event that the levels established are not met, within 60 days from the date the written notification from BNDS is received, collateral accepted by BNDES, in the amount corresponding to at least 130% of the value of the debt, unless, within that period, the levels described below are restored:

• Adjusted EBITDA debt ratio less than or equal to 4.5 (noting that only relative to the calculations to be performed on the basis of financial results for the fiscal years 2015 and 2016, shall prevail the rate of 5.5); and,

• Adjusted EBITDA ratio of Interest Expense greater than or equal to 2.0.

III. Interest TJLP 0.8% per year

673

Table of Contents

IV. Warranty: None.

V. When there are no warranties, if credit is unsecured or subordinate: Unsecured.

VI. Restrictions on issuer regarding:

- dividend distribution: None.
- disposal of certain assets: Vale may dispose of any assets if, at its discretion, this act is desirable to conduct its business and does not adversely affect Vale s ability to honor its obligations under the Deed.
- contracting of new debt: None.
- issuing of new securities: None.
- corporate deals involving the issuer, its parent companies or subsidiaries: fall under the events of early maturity listed in items (f), (h), (i) and (j) above.

VII. Fiduciary Agent: None.

Conditions for amendment to rights secured by such securities

Any amendments to the terms of the issued debentures shall be contingent on approval by debenture holders representing at least 50% plus of debenture of the debentures in circulation. For the purposes of reaching a quorum, debentures belonging to Vale shall be excluded from the number of debentures.

Other relevant characteristics

VALE and BNDESPAR on June 23, 2015, amended the referred deed of debenture to exclude (i) the possibility of interchanging debentures in shares issued by VLI, and to exclude all obligations from VLI and FNS under said deed of debenture, freely granting to BNDESPAR purchase options for a certain number of common shares of issued by VLI and held by Vale.

Table of Contents

18.6 Brazilian markets where company s securities are admitted for trading

The main market for trading the Company s common and preferred shares with no face value is the BM&FBOVESPA Commodities and Futures Stock Exchange in São Paulo.

The debentures of the Company are recorded for trading in the secondary market through (i) the Module CETIP21 Securities, administered and operated by CETIP; (ii) the PUMA Trading System BM&FBOVESPA by BM&FBOVESPA.

Table of Contents

18.7 Information on class and type of securities admitted to trading in foreign markets

Vale s common and preferred shares traded on LATIBEX, under the codes XVALO and XVALP, respectively. LATIBEX is an unregulated electronic market, established in 1999 by the Madrid Stock Exchange to allow trading of Latin American securities. These shares were listed on Latibex on 08/02/2000.

The following bonds: VALE42, VALE22, (reopening), VALE22, VALE39, VALE19, CVRD36, CVRD34B, CVRD17, CVRD16, CVRD34, INCO2032, CVRD20 and CVRD39 were accepted for trading in the United States of America, on the New York Stock Exchange, on 09/11/2012, 04/04/2012, 1/11/2012, 11/10/2009, 09/15/2009, 11/21/2006, 11/02/2005, 11/21/2006, 01/10/2006, 01/15/2004, 09/23/2002, 09/15/2010 and 09/15/2010. The Securities Exchange Commission (SEC) is the body responsible for the administration of the New York Stock Exchange and the Bank of New York is the depositary bank and custodial institution for the Bonds.

The American Depositary Shares (ADSs), represented by American Depositary Receipts (ADRs) Vale and VALE. P, were admitted to trading in the United States of America, on the New York Stock Exchange on 03/15/2002 and 06/20/2000 respectively. The ADSs, represented by ADRs, VALE3 and VALE5, have also been admitted for trading in France, on the NYSE Euronext, both on 07/21/2008. The Securities and Exchange Commission (SEC) is the body responsible for the administration of the New York Stock Exchange and the French *Autorité des Marchés Financiers* (AMF) is the entity responsible for the NYSE Euronext. The depositary bank is Citibank N.A., replacing JPMorgan Chase Bank N.A. on December 22, 2015. On December 31, 2015, there were 1,477,568,886 outstanding ADSs, 813,358,792 of which were common ADSs and 664,210,094 were preferred ADSs. Each ADS VALE or ADS VALE3 represents a common share issued by the company, and on December 31, 2015, 25.3% of the company s common shares were linked to the ADSs VALE and VALE3. Each ADS Vale.P or ADS VALE5, represents a Class A preferred share issued by the Company, and on December 31, 2015, 32.8% of Vale Class A preferred shares were linked to the ADSs VALE.P and VALE5.

Hong Kong Depositary Shares (HDSs), represented by Hong Kong Depositary Receipts (HDRs), 6210 and 6230 were admitted to trading in Hong Kong, on the Hong Kong Stock Exchange (HKeK) on 12/08/2010. The Hong Kong Securities and Futures Commission (SFC) is the body responsible for the administration of the Hong Kong Stock Exchange. The depositary bank is the JPMorgan Chase Bank N.A. On December 31, 2015, there were 1,867,850 outstanding HDRs, 1,721,300 of which were common HDRs and 146,550 were preferred HDRs. Each HDR 6210 represents a common share issued by the company, and on December 31, 2015, 0.05% of Vale s common shares were linked to the HDRs 6210. Each HDR 6230 represents a Class A preferred share issued by the Company and, on December 31, 2015, 0.01% Vale Class A preferred shares were linked to the HDRs 6230.

It is noteworthy that the Company s Board of Directors, on April 27, 2016, approved a proposal to end the HDRs listing program in the Hong Kong Stock Exchange (HKEx). The end of the program was approved by the HKEx on May 24, 2016 and shall become effective on July 28, 2016, at 9:00am (Hong Kong time).

Eurobond VALE23 with maturity in 2023 was admitted to trading on the regulated market of Luxembourg, the Luxembourg Stock Exchange and the EuroMTF, on July 10, 2012. The *Commission de la Surveillance du Secteur Financier* is responsible for approval of the issue prospectus and the Bank of New York is the depositary bank and custodial institution for *Eurobond* VALE23.

The *Eurobond CVRD18* with maturity in 2018 was admitted to trading on the regulated market of the Luxembourg Stock Exchange on 03/24/2010. The *Commission de la Surveillance du Secteur Financier* is responsible for approval of the issue prospectus and the Bank of New York is the depositary bank and custodial institution for *Eurobond CVRD18*.

Trading of Bonds, Depositary Shares and Eurobonds last year was wholly conducted abroad.

For more information about bonds issued in foreign markets, see items 18.8 and 18.12 of this Reference Form.

Table of Contents

18.8 Bonds issued abroad

Securities	**Securities Deposit Certificates**
Identification of securities	HDS (*Hong Kong Depositary Shares*) 6210
Jurisdiction	Hong Kong
Issuing Date	08/12/2010
Quantity (Units)	1.721.300
Global face value (Real)	R$ 353,557,601.95
Restriction to outstanding units	No.
Outstanding debt balance at the end of the last fiscal year	0.00
Convertibility	Yes
Convertibility condition and effects on share capital	1 HDR VALE 6210 corresponds to one (1) common share of the Company, and the conversion has no effect on share capital.
Possibility of Redemption	No.
Characteristics of securities	Each HDR VALE 6210 represents one common share of the Company. In the field Quantity above were considered HDRs in circulation on December 31, 2015. The Global Face Value above was determined by taking into consideration the number of HDRs reported and the closing price of the HDRs on December 31, 2015, subject to the Real conversion rate on that date.
Conditions for amendment to rights secured by such securities	None.
Other relevant characteristics	The HDR VALE are traded on the Hong Kong Stock Exchange (HKEx), under the code 6210. The HDRs are represented by HDR (Hong Kong depositary receipts) issued by the depositary, JPMorgan Chase Bank NA. For information about the process of closing the listing of HDRs on HKEx, see item 18.7 of this Reference Form.

Securities	**Securities Deposit Certificates**
Identification of securities	HDS (*Hong Kong Depositary Shares*) 6230
Jurisdiction	Hong Kong
Issuing Date	08/12/2010
Quantity (Units)	146.550
Global face value (Real)	R$ 23,740,499.15
Restriction to outstanding units	No.
Outstanding debt balance at the end of the last fiscal year	0.00
Convertibility	Yes
Convertibility condition and effects on share capital	1 HDS VALE 6210 corresponds to one (1) preferred share issued by the Company, and the conversion has no effect on share capital.
Possibility of Redemption	No.
Characteristics of securities	Each HDS VALE 6232 represents one preferred share issued by the Company.

677

Table of Contents

	In the field Quantity above were considered HDSs in circulation on December 31, 2015.
	The Global Face Value above was determined by taking into consideration the number of HDRs reported and the closing price of the HDRs on December 31, 2015, subject to the Real conversion rate on that date.
Conditions for amendment to rights secured by such securities	None.
Other relevant characteristics	The HDS 6230 are traded on the Hong Kong Stock Exchange (HKEx), under the code 6230. The HDSs are represented by HDR (Hong Kong depositary receipts) issued by the depositary, JPMorgan Chase Bank NA. For information about the process of closing the listing of HDRs on HKEx, see item 18.7 of this Reference Form.
Securities	**Securities Deposit Certificates**
Identification of securities	ADS (American Depositary Shares) VALE
Jurisdiction	United States of America
Issuing Date	15/03/2002
Quantity (Units)	813.358.792
Global face value (Real)	R$ 10,449,051,222.20
Restriction to outstanding units	No
Outstanding debt balance at the end of the last fiscal year	0.00
Convertibility	Yes
Convertibility condition and effects on share capital	1 ADS VALE 6210 corresponds to one (1) common share issued by the Company, and the conversion has no effect on share capital.
Possibility of Redemption	No
Characteristics of securities	Each ADS VALE corresponds to one common share issued by Company.
	In the field Quantity above were considered ADS in circulation on December 31, 2015.
	The Global Face Value above was determined by taking into consideration the number of ADS reported and the closing price of the ADS on December 31, 2015, subject to the Real conversion rate on that date.
Conditions for amendment to rights secured by such securities	None.
Other relevant characteristics	ADS VALE are traded on the New York Stock Exchange (NYSE), under the code VALE. The ADSs are represented by ADRs (American Depositary Receipts) issued by the depositary, Citibank NA

Table of Contents

Securities	**Securities Deposit Certificates**
Identification of securities	ADS (American Depositary Shares) VALE.P
Jurisdiction	United States of America
Issuing Date	20/06/2000
Quantity (Units)	664.210.094
Global face value (Real)	R$ 6,613,699,316.38
Restriction to outstanding units	No
Outstanding debt balance at the end of the last fiscal year	0.00
Convertibility	Yes
Convertibility condition and effects on share capital	1 ADS VALE.P corresponds to one (1) preferred share issued by the Company, and the conversion has no effect on share capital. The quantity (units) above represents ADS VALE in circulation on December 31, 2015. The above total value was determined based on the HDS closing price on December 31, 2015.
Possibility of Redemption	No
Characteristics of securities	Each ADS VALE.P represents one preferred share issued by the Company. In the field Quantity above were considered ADS in circulation on December 31, 2015. The Global Face Value above was determined by taking into consideration the number of ADS reported and the closing price of the ADS on December 31, 2015, subject to the Real conversion rate on that date.
Conditions for amendment to rights secured by such securities	None.
Other relevant characteristics	ADS VALE.P are traded on the New York Stock Exchange under the code VALE.P. ADS VALE.P are represented by ADRs (American Depositary Receipts) issued by the depositary, Citibank N.A.

18.9 Distribution public offerings made by the issuer or by third parties, including controlling companies and subsidiaries, relating to issuer s securities, during the last three financial years

2015

In August 2015, Vale submitted to CVM s approval a request the registration of a public distribution of 1,000,000 (one million) simple, infrastructure debentures, non-convertible into shares, unsecured, in two series, the 9th (ninth) issued by Company, with a unit face value of R$ 1,000.00 (one thousand reais) on the date the debentures are issued, that is, on August 15, 2015, totaling, on this date, the value of R$ 1,000,000,000.00 (one billion reais).

On September 18, 2015, Vale concluded the offering of infrastructure bonds. Initially, Vale expected to capture RS$ 1 billion through the offering, but it raised the issuing to R$ 1.35 billion due to the demand for bond. Debentures shall be monetarily updated and they shall pay annual interest, priced at IPCA + 6.6232% per year (equivalent to NTN-B 2020 - 0.5%) and IPCA + 6.6252% per annum (equivalent to NTN-B

2022 - 0.5%), with maturity in 2020 and 2022, respectively. For more information on this issuing, see item 18.5 of this Reference Form.

Table of Contents

2014

In February 2014, Vale concluded the public offering of 1,000,000 (one million) simple debentures, non-convertible into shares, unsecured, in four series, with a unit face value of R$ 1.0 thousand, totaling R$ 1.0 billion. Debentures shall be monetarily updated and they shall pay annual interest, priced at IPCA + 6.46% per year (equivalent to NTN-B 2020 - 0.15%), IPCA + 6.57% per year (equivalent to NTN-B 2022 - 0.10%), IPCA + 6.71% per year (equivalent to NTN-B 2024 + 0%) and IPCA + 6.78% per year (equivalent to NTN-B 2030+ 0%), with maturities in 2021, 2024, 2026 and 2029, depending on their series. Debentures are unsecured obligations and are on an equal footing with all of Vale s similar obligations.

For more information on this issuing, see item 18.5 of this Reference Form.

2013

In 2013, Vale did not make public offerings of securities.

18.10 - Public Offers of Securities Distribution

a. how the proceeds from the offering were used

2015

In August 2015, Vale submitted to CVM s approval a request the registration of a public distribution of 1,000,000 (one million) simple, infrastructure debentures, non-convertible into shares, unsecured, in two series, the 9th (ninth) issued by Company, with a unit face value of R$ 1,000.00 (one thousand reais) on the date the debentures are issued, that is, on August 15, 2015, totaling, on this date, the value of R$ 1,000,000,000.00 (one billion reais).

On September 18, 2015, Vale concluded the offering of infrastructure bonds. Initially, Vale expected to capture RS$ 1 billion through the offering, but it raised the issuing to R$ 1.35 billion due to the demand for bond. Debentures shall be monetarily updated and they shall pay annual interest, priced at IPCA + 6.6232% per year (equivalent to NTN-B 2020 - 0.5%) and IPCA + 6.6252% per annum (equivalent to NTN-B 2022 - 0.5%), with maturity in 2020 and 2022, respectively.

The net proceeds obtained by the Company with the Issuance were fully intended for the reimbursement of expenses, expenditures and/or debts related to investment projects in the Company s infrastructure considered a priority, under Article 2 of Act # 12.431,from Decree # 7.603 and Ordinance from the Ministry of Transport.

2014

In February 2014, Vale concluded the public offering of 1,000,000 (one million) simple debentures, non-convertible into shares, unsecured, in four series, with a unit face value of R$ 1.0 thousand, totaling R$ 1.0 billion. Debentures shall be monetarily updated and they shall pay annual interest, priced at IPCA + 6.46% per year (equivalent to NTN-B 2020 - 0.15%), IPCA + 6.57% per year (equivalent to NTN-B 2022 - 0.10%), IPCA + 6.71% per year (equivalent to NTN-B 2024 + 0%) and IPCA + 6.78% per year (equivalent to NTN-B 2030+ 0%), with maturities in 2021, 2024, 2026 and 2029, depending on their series. Debentures are unsecured obligations and are on an equal footing with all of Vale s similar obligations.

The net proceeds obtained by the Company with the Issuance were fully intended for the reimbursement of expenses, expenditures and/or debts related to investment projects in the Company s infrastructure considered a priority, under Article 2 of Act # 12.431,from Decree # 7.603 and Ordinance from the Ministry of Transport.

Table of Contents

For more information on this issuing, see item 18.5 of this Reference Form.

2013

In 2013, Vale did not make public offerings of securities.

c. If there were relevant differences between the actual application of the resources and the intended application disclosed in the respective distribution statement

There were no relevant differences between the actual application of the resources and the intended application disclosed in the respective distribution statement.

c. If there were differences, list the justification for the difference

Not applicable since there were no differences.

Table of Contents

18.11 Description of takeover bids made by the issuer for shares issued by third parties

In the past 3 (three) fiscal years, the Company has not made any public offering of acquisition relative to shares issued by third parties

18.12 Other relevant information

Additional information to item 18.5

Following is a description of securities issued by the Company s subsidiary.

Security	**Debentures Salobo**
Quantity	5 debentures
Unit Value	R$ 15,250,399.93
Global Face Value	R$ 76.251,999.65
Outstanding Debt balance	R$ 1,146,033,899.91
Issuing date	01/06/97
Restriction to outstanding units	No
Convertibility into shares or granting the right to subscribe or acquire issuer shares	The debentures combine 5 subscription premiums giving the holder the right to subscribe to preferred shares of Salobo Metais S.A., in the amount equivalent to 50% of the shares issued existing at the time the subscribed fully paid in capital 2 times the issue value of the debentures.
Possibility of redemption	None
Characteristics of Securities	I. Maturity date: 7 years as of the achievement of accumulated commercial invoicing of 200,000 tons of copper by Salobo Metais S.A. (5 successive annual installments, formed of principal and interest due after the first 2 years after the achievement of accumulated commercial invoicing of 200,000 tons of grade A copper cathode of London Metals Exchange) II. Possibility of early redemption: none III. Interest: IGP-DI + 6.5% per year (capitalized)

IV. Guarantee: Vale S.A. guarantee

V. In the absence of any guarantee, if the credit is secured or subordinate: the debentures will be subordinate to the other creditors of the issuer

VI. Possible restrictions imposed on the issuer, in relation to:

- distribution of dividends: None
- disposal of determined assets: none
- contracting of new debt: none
- issuing new securities: none
- corporate operations involving the issuer, its controlling

Table of Contents

	shareholders or subsidiaries: none
	VII. The fiduciary agent, indicating the key terms of the contract: none.
Conditions to alter rights assured by the securities	None
Other relevant characteristics	Debentures issued by Salobo Metais s.a., privately, which were fully subscribed by the Banco Nacional de Desenvolvimento Econômico e Social (BNDES)
	When issuing shares arising from the exercise of the right of subscription, a premium will be paid corresponding to the dividends distributed to shareholders until that date, in the proportion of shares subscribed by BNDES or its assignee.
	In March 2015, the Salobo mine reached the production needed to start the debt payment flow, as described above.

Additional Information to items 18.7 and 18.8

Following is a description of Bonds issued by the Company and its subsidiaries.

Security	**Bonds VALE42**
Jurisdiction	United States of America
Quantity	*Bonds* are issued at the minimum value of US$ 2,000, always in multiples of US$ 1,000
Global Face Value	US$1,500,000.,000.00
Outstanding Debt Balance at the end of the last fiscal year	US$1,529,196,428.57
Issuing date	009/11/2012
Restriction to outstanding units	None
Convertibility into shares or granting the right to subscribe or acquire issuer shares	None
Possibility of redemption	I. Possibilities of redemption

- Redemption by means of payment of premium, at any time, of all notes, or part of the notes, periodically, at Vale Overseas criterion.

- Redemption due to changes in the tax law: if Vale or Vale Overseas are forced to maintain values

greater than 15%, in the event of payment of interest over note, due to changes in the Brazilian or in Cayman tax law, Vale Overseas may redeem the entirety of the notes in advance.

II. Formula for calculating value of redemption:

- The redemption value will be 100% of the principal value or the sum of the current value of the interest installments and the remaining principal, whichever is the greatest, deducted at the date of redemption at the rate equivalent to Treasury + 0.45%

- Redemption due to changes in the tax law: The redemption value

Table of Contents

	will be equal to 100% of the principal value plus the interests accrued up to the date of redemption.
Characteristics of Bonds	I. Maturity date: 09/11/2042
	II. Early maturity: If a default event occurs, which is not corrected or condoned, the trustee, as instructed by at least 25% of the note holders for the value of the principal showing an open debt, must declare the principal value, the interests accrued and any amount unpaid immediately due. The default events are described in the deed of issuance, including, but not limited to: • failure to pay interests, principal or premium, if any. • in relation to Vale, its relevant subsidiaries (any subsidiary which total assets are greater than 10% of the total consolidated assets of the group at the end of each fiscal year), and in regard to Vale Overseas, the occurrence of any default, in any transaction characterized as debt, that exceeds, in total, US$ 100 million and this default results in the effective acceleration of the debt. • failure from Vale or Vale Overseas to comply with their covenants in relation to the note and this failure persists 60 days after Vale or Vale Overseas have received communication from the trustee or from at least 25% of the note holders reporting the non-compliance of the obligations. These obligations include, but are not limited to: (i) obligation not to conduct a merger or sale of the entirety of the assets or a significant part of the assets of Vale or Vale Overseas, with some exceptions and (ii) limitations to granting collateral in debt transactions, with some permitted exceptions. • insolvency or bankruptcy. • Vale Overseas notes become illegal, generating the acceleration of over US$ 100 million total. • the collateral becomes invalid or unenforceable.
	III. Interest: 5.625% per year

IV. Guarantee: There is no granting of collateral:

V. The credit is secured or subordinate: not applicable

VI. Possible restrictions imposed on the issuer, in relation to:

- distribution of dividends: There are no restrictions on dividend distribution by Vale..

- disposal of determined assets: Vale and Vale Overseas may not, without the consent from the majority of the note holders, participate in a merger with another company or transfer all or a significant part of its assets to a third party, except, however that: (i) the company created by this consolidation or a third party that acquired said assets undertakes to make timely payments of the principal and interests and other obligations from Vale and Vale Overseas in the deed of issuance; (ii) no default event occurs as a result of the transaction; and (iii) Vale or Vale Overseas, as applicable, provide their trustee with a certification and a legal opinion attesting that the consolidation or transfer of assets meet the requirements set forth in item (ii).

- contracting of new debt: there are no restrictions to contracting

Table of Contents

	new debts by Vale. • issuing new securities: Vale may issue, without the consent from the note holders, new notes according to the terms and conditions applicable to Bond VALE 42. In addition, Vale may issue new notes under other terms and conditions. Vale has the right to guarantee, without the consent from the note holders, debts from its subsidiaries and issue its own debt. • Vale may not consolidate or merge with any other company and it may not transferred all or a substantial number of its mining properties or assets without consent from more than 50% of the note holders in the outstanding principal, except when the new corporation or the corporation that substantially acquires all assets or all properties expressly become liable as the successor for all Vale obligations.
	VII. The fiduciary agent(indicating the key terms of the contract): The Bank of New York Mellon acts as a trustee, registrar, paying agent and transfer agent of the notes within the scope of the deed of issuance and its main role is to secure investors rights, and the Bank of New York Mellon Trust (Japan), Ltd. is the main paying agent..
Conditions to alter rights assured by the securities	The deed of issuance, allows, at anytime, with some exceptions, the amendment the rights and obligations of Vale and the investors in the notes. Said amendments must be executed by Vale and by the trustee upon the consent from the majority of the note holders for the value of the principal showing an open debt
Other relevant characteristics	Bonds issued by Vale Overseas Ltd.
Security	**Bonds VALE22**
Jurisdiction	United States of America
Quantity	Bonds are issued at the minimum value of US$ 2,000, always in multiples of US$ 1,000
Global Face Value	Bonds were issued in US$. US$ 1,000,000,000.00 were issued on 01/11/2012 and US$ 1,250,000,000.00 were issued by the reopening of existing bond on 04/04/2012, in a total of US$ 2,250,000,000.00
Outstanding Debt Value at the end of the last fiscal year	US$ 2,296,362,817.22
Issuing date	11/01/2012
Restriction to outstanding units	None
Convertibility into shares or granting the right to subscribe or acquire issuer shares	None
Possibility of redemption	I. Possibilities of redemption

- Redemption by means of payment of premium, at any time, of all notes, or part of the notes, periodically, at Vale Overseas criterion.

- Redemption due to changes in the tax law: if Vale or Vale Overseas are forced to maintain values greater than 15%, in the event of payment of interest over note, due to changes in the Brazilian or in

Table of Contents

Cayman tax law, Vale Overseas may redeem the entirety of the notes in advance.

II. Formula for calculating value of redemption:

- The redemption value will be 100% of the principal value or the sum of the current value of the interest installments and the remaining principal, whichever is the greatest, deducted at the date of redemption at the rate equivalent to Treasury + 0.40%

- Redemption due to changes in the tax law: The redemption value will be equal to 100% of the principal value plus the interests accrued up to the date of redemption.

Table of Contents

Characteristics of Bonds

II. Maturity date: 01/11/2022

II. Early maturity: If a default event occurs, which is not corrected or condoned, the trustee, as instructed by at least 25% of the note holders for the value of the principal showing an open debt, must declare the principal value, the interests accrued and any amount unpaid immediately due. The default events are described in the deed of issuance, including, but not limited to:

- failure to pay interests, principal or premium, if any.

- in relation to Vale, its relevant subsidiaries (any subsidiary which total assets are greater than 10% of the total consolidated assets of the group at the end of each fiscal year), and in regard to Vale Overseas, the occurrence of any default, in any transaction characterized as debt, that exceeds, in total, US$ 50 million and this default results in the effective acceleration of the debt.

- failure from Vale or Vale Overseas to comply with their covenants in relation to the note and this failure persists 60 days after Vale or Vale Overseas have received communication from the trustee or from at least 25% of the note holders reporting the non-compliance of the obligations. These obligations include, but are not limited to: (i) obligation not to conduct a merger or sale of the entirety of the assets or a significant part of the assets of Vale or Vale Overseas, with some exceptions and (ii) limitations to granting collateral in debt transactions, with some permitted exceptions.

- insolvency or bankruptcy.

- Vale Overseas notes become illegal, generating the acceleration of over US$ 50 million total.

- the collateral becomes invalid or unenforceable.

III. Interest: 4.375% per year
IV. Guarantee: There is no granting of collateral: Vale guarantees, irrevocably and unconditionally, the full payment of the principal,

interests and other amounts owed in relation to this note, in the event Vale Overseas fails to pay.

V. the credit is secured or subordinate: N/A

VI. Possible restrictions imposed on the issuer, in relation to:

- distribution of dividends: There are no restrictions on dividend distribution by Vale. However, Vale Overseas may not declare or pay any dividends, without the trustee s consent, as instructed by at least 25% of the note holders for the value of the principal showing an open debt.

- disposal of determined assets: Vale and Vale Overseas may not, without the consent from the majority of the note holders, participate in a merger with another company or transfer all or a significant part of its assets to a third party, except, however that: (i) the company created by this consolidation or a third party that acquired said assets undertakes to make timely payments of the principal and interests and other obligations from Vale and Vale Overseas in the deed of issuance; (ii) no default event occurs as a result of the transaction; and (iii) Vale or Vale Overseas, as applicable, provide their trustee with a certification and a legal opinion attesting that the consolidation or transfer of assets meet

Table of Contents

the requirements set forth in item (ii).

- contracting of new debt: there are no restrictions to contracting new debts by Vale. Vale Overseas may issue debts instruments within the scope of the deed of issuance, but Vale Overseas may not contract any other type of loan or financing.

- issuing new securities: Vale Overseas may issue, without the consent from the note holders, new notes according to the terms and conditions applicable to Bond VALE 2022. In addition, Vale Overseas may issue new notes under other terms and conditions. Vale has the right to guarantee, without the consent from the note holders, debts from its subsidiaries and issue its own debt.

- Corporate operations involving the issuer, its parent companies and subsidiaries

- Vale Overseas and Vale may not consolidate or merge with any other entity or, (a) in the case of Vale Overseas, transfer all or nearly all of its properties or assets to any other entity or (b) in the case of Vale, transfer all or nearly all of its mining properties or assets to any other entity without the consent of more than 50% of the note holders in amount of the outstanding principal, unless the corporation created or that substantially acquired all the assets or all properties expressly becomes liable as the successor corporation for all the obligations of Vale Overseas and / or Vale.

- Vale Overseas will do everything it can to preserve its legal existence updated in the Cayman Islands.

- Vale shall always, directly or indirectly own 100% of the share capital of Vale Overseas.

- Vale Overseas may not (i) engage in any business that is not related to the issuance of bonds or acquire and hold securities for the payment of bonds ; (ii) have any

	subsidiary; or (iii) consolidate or merge with any other entity without the consent of the trustee under the guidance of at least 25% of the note holders in the amount of the outstanding principal. • Vale and Vale Overseas shall not be able to create or approve any amendments Vale Overseas articles of incorporation allowing Vale Overseas to engaged in any other activity without the consent of the trustee under the guidance of at least 25% of note holders in the amount of the outstanding principal.
Conditions to alter rights assured by the securities	VII. The fiduciary agent, indicating the key terms of the contract: The Bank of New York Mellon acts as a trustee of the notes within the scope of the deed of issuance and its main role is to secure investors rights. The deed of issuance, allows, to amend the rights and obligations of Vale Overseas and the investors in the notes. Said amendments must be executed upon the consent from 100% or the majority of the note holders for the value of the principal showing an open debt, according

Table of Contents

	to the type of amendment. Some non-material clarifications or amendments may be made without the consent from the note holders.
Other relevant characteristics	Bonds issued by the subsidiary Vale Overseas Ltd.
Security	**Eurobond VALE23**
Jurisdiction	United States of America
Quantity	Bonds are issued at the minimum value of EUR 100,000.00, always in multiples of EUR 1,000.00, above
Global Face Value	EUR 750,000,000.00
Outstanding Debt Value at the end of the last fiscal year	EUR 777,354,452.06
Issuing date	7/10/2012
Restriction to outstanding units	None.
Convertibility into shares or granting the right to subscribe or acquire issuer shares	None.
Possibility of redemption	I. Possibilities of redemption:

- Redemption by means of payment of premium, at any time, of all bonds or part of the bonds periodically, at issuer s criterion.

- Redemption due to changes in the tax law: if Vale is forced to maintain values greater than 15%, in the event of payment of interest over note, due to changes in the Brazilian tax law, Vale may redeem the entirety of the notes in advance.

II. Formula for calculating value of redemption:

- The redemption value will be 100% of the principal value or the sum of the current value of the interest installments and the remaining principal, whichever is the greatest, deducted at the date of redemption at the rate equivalent to Bund Rate (security return German Bund) + 0.45%

- Redemption due to changes in the tax law: The redemption value will be equal to 100% of the principal value plus the interests accrued up to the date of redemption.

Characteristics of Bonds	I. Maturity date: 1/10/2023
	II. Early maturity: if a default event occurs, which is not corrected or condoned, the trustee, as instructed by at least 25% of the note holders for the value of the principal showing an open debt, must declare the principal value, the interests accrued and any amount unpaid immediately due. The default events are described in the deed of issuance, including, but not limited to: • failure to pay interests, principal or premium, if any. • in relation to Vale, its relevant Subsidiaries (subsidiaries with total assets exceeding 10% of the total consolidated assets of the group at the end of each fiscal year): the occurrence of any default, in any

Table of Contents

transaction characterized as debt, that exceeds, in total, US$ 50 million and this default results in the effective acceleration of the debt.

- failure from Vale to comply with their covenants in relation to the note and this failure persists 60 days after Vale or Vale Overseas have received communication from the trustee or from at least 25% of the note holders reporting the non-compliance of the obligations. These obligations include, but are not limited to: (i) obligation not to conduct a merger or sale of the entirety of the assets or a significant part of the assets of Vale or Vale Overseas, with some exceptions and (ii) limitations to granting collateral in debt transactions, with some permitted exceptions.

- insolvency or bankruptcy.

- notes issued by Vale Overseas Limited become illegal, generating the acceleration of over US$ 50 million total.

III. Interest: 3.75% per year.

IV. Guarantee: The notes are obligations unsecured by Vale and do not hold privileges over other Vale unsecured debts.

V. If the credit is secured or subordinate: N/A.

VI. Possible restrictions imposed on the issuer, in relation to:

- distribution of dividends: There are no restrictions on dividend distribution by Vale.

- disposal of determined assets: Vale may not, without the consent from the majority of the note holders, participate in a merger with another company or transfer all or a significant part of its assets to a third party, except, however that: (i) the company created by this consolidation or a third party that acquired said assets undertakes to make timely payments of the principal and interests and other obligations from Vale in the deed of issuance; (ii) no default event occurs as a result of the transaction; and (iii) Vale, as applicable, provide their trustee with a certification and a legal opinion attesting that the consolidation or transfer of assets meet the requirements set forth in item (ii).

- contracting of new debt: there are no restrictions to contracting new debts by Vale.

- issuing new securities: Vale may issue, without the consent from the note holders, new notes according to the terms and conditions applicable to Eurobonds VALE23. In addition, Vale may issue new notes under other terms and conditions. Vale is entitled to

Table of Contents

	collateralize debts by its subsidiaries, without consent by the holders. • Corporate operations involving the issuer, its parent or sister companies: Vale may not consolidate or merge with any other company and it may not transferred all or a substantial number of its mining properties or assets without consent from more than 50% of the note holders in the outstanding principal, except when the new corporation or the corporation that substantially acquires all assets or all properties expressly become liable as the successor for all Vale obligations.
	VII. The fiduciary agent (indicate the key terms of the contract): The Bank of New York Mellon acts as a trustee, registrar, paying agent e transfer agent of the notes within the scope of the deed of issuance and its main role is to secure investors rights. The Bank of New York Mellon Trust (Japan), Ltd. acts as main paying agent, and the Bank of New York (Luxemburg) S.A. acts as registrar in Luxembourg, paying agent and transfer agent.
Conditions to alter rights assured by the securities	The deed of issuance, allows, at any time, with some exceptions, to amend the rights and obligations of Vale Overseas and the investors in the notes. Said amendments may only be executed upon consent from the majority of the note holders for the value of the principal showing an open debt.
Other relevant characteristics	Bond issued by Vale S.A.
Security	**Bonds VALE39**
Jurisdiction	United States of America
Quantity	Bonds are issued at the minimum value of US$ 2,000.00, always in multiples of US$ 1,000.00.
Global Face Value	US$ 1,000,000,000.00
Outstanding Debt Value at the end of the last fiscal year	US$ 1,009,548,611.11
Issuing date	11/10/09
Restriction to outstanding units	None
Convertibility into shares or granting the right to subscribe or acquire issuer shares	None
Possibility of redemption	I. Possibilities of redemption • Redemption by means of payment of premium, at any time, of all bonds or part of the notes, periodically, at Vale Overseas criterion. • Redemption due to changes in the tax law: if Vale or Vale Overseas are forced to maintain values greater than 15%, in the event of payment of interest

over note, due to changes in the Brazilian or in Cayman tax law, Vale Overseas may redeem the entirety of the notes in advance.

II. Formula for calculating value of redemption:

- The redemption value will be 100% of the principal value or the sum of the current value of the interest installments and the remaining principal, whichever is the greatest, deducted at the date of redemption

Table of Contents

at the rate equivalent to Treasury + 0.40%

- Redemption due to changes in the tax law: The redemption value will be equal to 100% of the principal value plus the interests accrued up to the date of redemption.

Characteristics of Bonds

I. Maturity date: 11/10/39

II. Early maturity: if a default event occurs, which is not corrected or condoned, the trustee, as instructed by at least 25% of the note holders for the value of the principal showing an open debt, must declare the principal value, the interests accrued and any amount unpaid immediately due. The default events are described in the deed of issuance, including, but not limited to:

- failure to pay interests, principal or premium, if any.

- in relation to Vale, its relevant subsidiaries (subsidiaries with total assets exceeding 10% of the total consolidated assets of the group at the end of each fiscal year) and Vale Overseas: the occurrence of any default, in any transaction characterized as debt, that exceeds, in total, US$ 50 million and this default results in the effective acceleration of the debt.

- failure from Vale or Vale Overseas to comply with their covenants in relation to the note and this failure persists 60 days after Vale or Vale Overseas have received communication from the trustee or from at least 25% of the note holders reporting the non-compliance of the obligations. These obligations include, but are not limited to: (i) obligation not to conduct a merger or sale of the entirety of the assets or a significant part of the assets of Vale or Vale Overseas, with some exceptions and (ii) limitations to granting collateral in debt transactions, with some permitted exceptions.

- insolvency or bankruptcy.

- Vale Overseas notes become illegal, generating the acceleration of over US$ 50 million total.

- the collateral becomes invalid or unenforceable.

III. Interest: 6.875% per year

IV. Guarantee: There is no granting of collateral. Vale guarantees, irrevocably and unconditionally, the full payment of the principal, interests and other amounts owed in relation to this note, in the event Vale Overseas fails to pay.

IV. If the credit is secured or subordinate: N/A

V. Possible restrictions imposed on the issuer, in relation to:

- distribution of dividends: There are no restrictions on dividend distribution by Vale. However, Vale Overseas may not declare or pay any dividends, without the trustee s consent, as instructed by at least 25% of the

Table of Contents

note holders for the value of the principal showing an open debt.

- disposal of determined assets: Vale and Vale Overseas may not, without the consent from the majority of the note holders, participate in a merger with another company or transfer all or a significant part of its assets to a third party, except, however that: i) the company created by this consolidation or a third party that acquired said assets undertakes to make timely payments of the principal and interests and other obligations from Vale and Vale Overseas in the deed of issuance; ii) no default event occurs as a result of the transaction; and iii) Vale or Vale Overseas, as applicable, provide their trustee with a certification and a legal opinion attesting that the consolidation or transfer of assets meet the requirements set forth in item (ii).

- contracting of new debt: there are no restrictions to contracting new debts by Vale. Vale Overseas may issue debts instruments within the scope of the deed of issuance, but Vale Overseas may not contract any other type of loan or financing.

- issuing new securities: Vale Overseas may issue, without the consent from the note holders, new notes according to the terms and conditions applicable to Bond VALE 2039. In addition, Vale Overseas may issue new notes under other terms and conditions. Vale has the right to guarantee, without the consent from the note holders, debts from its subsidiaries and issue its own debt.

- Corporate operations involving the issuer, its parent companies and subsidiaries:

- Vale Overseas and CVRD may not consolidate or merge with any other entity or, (a) in the case of Vale

Overseas, transfer all or nearly all of its properties or assets to any other entity or (b) in the case of Vale, transfer all or nearly all of its mining properties or assets to any other entity without the consent of more than 50% of the note holders in amount of the outstanding principal, unless the corporation created or that substantially acquired all the assets or all properties expressly becomes liable as the successor corporation for all the obligations of Vale Overseas and / or Vale.

- Vale Overseas will do everything it can to preserve its legal existence updated in the Cayman Islands.

- Vale shall always, directly or indirectly own 100% of the share capital of Vale Overseas.

- Vale Overseas may not (i) engage in any business that is not related to the issuance of bonds or acquire and hold securities

Table of Contents

	for the payment of bonds ; (ii) have any subsidiary; or (iii) consolidate or merge with any other entity without the consent of the trustee under the guidance of at least 25% of the note holders in the amount of the outstanding principal. • Vale and Vale Overseas shall not be able to create or approve any amendments Vale Overseas articles of incorporation allowing Vale Overseas to engaged in any other activity without the consent of the trustee under the guidance of at least 25% of note holders in the amount of the outstanding principal.
Conditions to alter rights assured by the securities	VII. the fiduciary agent, indicating the key terms of the contract: The Bank of New York acts as a trustee of the notes within the scope of the deed of issuance and its main role is to secure investors rights The deed of issuance, allows to amend the rights and obligations of Vale Overseas and the investors in the notes. Said amendments must be executed upon consent from 100% or the majority of the note holders for the value of the principal showing an open debt, according to the type of amendment. Some non-material clarifications or amendments may be made without the consent from the note holders.
Other relevant characteristics	Bonds issued by the subsidiary Vale Overseas Ltd.
Security	***Bonds*** **VALE19**
Jurisdiction	United States of America
Quantity	Bonds are issued at the minimum value of US$ 2,000.00, always in multiples of US$ 1,000.00.
Global Face Value	US$ 1,000,000,000.00
Outstanding Debt Value at the end of the last fiscal year	US$1,016,406,250.00
Issuing date	9/15/2009
Restriction to outstanding units	None
Convertibility into shares or granting the right to subscribe or acquire issuer shares	None

Table of Contents

Possibility of redemption	I. Possibilities of redemption • Redemption by means of payment of premium, at any time, of all notes, or part of the notes, periodically, at Vale Overseas criterion. • Redemption due to changes in the tax law: if Vale or Vale Overseas are forced to maintain values greater than 15%, in the event of payment of interest over note, due to changes in the Brazilian or in Cayman tax law, Vale Overseas may redeem the entirety of the notes in advance. III. Formula for calculating value of redemption: • The redemption value will be 100% of the principal value or the sum of the current value of the interest installments and the remaining principal, whichever is the greatest, deducted at the date of redemption at the rate equivalent to Treasury + 0.30% • Redemption due to changes in the tax law: The redemption value will be equal to 100% of the principal value plus the interests accrued up to the date of redemption.
Characteristics of *Bonds*	I. Maturity date: 9/15/19 II. Early maturity: if a default event occurs, which is not corrected or condoned, the trustee, as instructed by at least 25% of the note holders for the value of the principal showing an open debt, must declare the principal value, the interests accrued and any amount unpaid immediately due. The default events are described in the deed of issuance, including, but not limited to: • failure to pay interests, principal or premium, if any. • in relation to Vale, its subsidiaries (subsidiaries with total assets exceeding 10% of the total consolidated assets of the group at the end of each fiscal year) and

Vale Overseas: the occurrence of any default, in any transaction characterized as debt, that exceeds, in total, US$ 50 million and this default results in the effective acceleration of the debt.

- failure from Vale or Vale Overseas to comply with their covenants in relation to the note and this failure persists 60 days after Vale or Vale Overseas have received communication from the trustee or from at least 25% of the note holders reporting the non-compliance of the obligations. These obligations include, but are not limited to: (i) obligation not to conduct a merger or sale of the entirety of the assets or a significant part of the assets of Vale or Vale Overseas, with some exceptions and (ii) limitations to granting collateral in debt transactions, with some permitted exceptions.

- insolvency or bankruptcy.

- Vale Overseas notes become illegal, generating the acceleration of over US$ 50 million total.

- the collateral becomes invalid or unenforceable.

III. Interest: 5.625% per year

Table of Contents

IV. Guarantees: There is no granting of collateral. Vale guarantees, irrevocably and unconditionally, the full payment of the principal, interests and other amounts owed in relation to this note, in the event Vale Overseas fails to pay.

V. If the credit is secured or subordinate: not applicable

VI. Possible restrictions imposed on the issuer, in relation to:

- distribution of dividends: There are no restrictions on dividend distribution by Vale. However, Vale Overseas may not declare or pay any dividends, without the trustee s consent, as instructed by at least 25% of the note holders for the value of the principal showing an open debt.

- disposal of determined assets: Vale and Vale Overseas may not, without the consent from the majority of the note holders, participate in a merger with another company or transfer all or a significant part of its assets to a third party, except, however that: (i) the company created by this consolidation or a third party that acquired said assets undertakes to make timely payments of the principal and interests and other obligations from Vale and Vale Overseas in the deed of issuance; (ii) no default event occurs as a result of the transaction; and (iii) Vale or Vale Overseas, as applicable, provide their trustee with a certification and a legal opinion attesting that the consolidation or transfer of assets meet the requirements set forth in item (ii).

- contracting of new debt: there are no restrictions to contracting new debts by Vale. Vale Overseas may issue debts instruments within the scope of the deed of issuance, but Vale Overseas may not contract any other type of loan or financing, without the consent from the trustee, as instructed by at least 25% of the note holders for the value of the principal showing an open debt.

- issuing new securities: Vale Overseas may issue, without the consent from the note holders, new notes according to the terms and conditions applicable to Bond VALE 2019. In addition, Vale Overseas may issue new notes under other terms and conditions. Vale has the right to guarantee, without the consent from the note holders, debts from its subsidiaries and issue its own debt.

- Corporate operations involving the issuer, its parent companies or subsidiaries:

Table of Contents

	• Vale Overseas and CVRD may not consolidate or merge with any other entity or, (a) in the case of Vale Overseas, transfer all or nearly all of its properties or assets to any other entity or (b) in the case of Vale, transfer all or nearly all of its mining properties or assets to any other entity without the consent of more than 50% of the note holders in amount of the outstanding principal, unless the corporation created or that substantially acquired all the assets or all properties expressly becomes liable as the successor corporation for all the obligations of Vale Overseas and / or Vale. • Vale Overseas will do everything it can to preserve its legal existence updated in the Cayman Islands. • Vale shall always, directly or indirectly own 100% of the share capital of Vale Overseas. • Vale Overseas may not (i) engage in any business that is not related to the issuance of bonds or acquire and hold securities for the payment of bonds ; (ii) have any subsidiary; or (iii) consolidate or merge with any other entity without the consent of the trustee under the guidance of at least 25% of the note holders in the amount of the outstanding principal. • Vale and Vale Overseas shall not be able to create or approve any amendments Vale Overseas articles of incorporation allowing Vale Overseas to engaged in any other activity without the consent of the trustee under the guidance of at least 25% of note holders in the amount of the outstanding principal.
Conditions to alter rights assured by the securities	VII. The fiduciary agent: The Bank of New York acts as a *trustee* of the notes within the scope of the deed of issuance and its main role is to secure investors rights. The deed of issuance, allows to amend the rights and obligations of Vale Overseas and the investors in the notes. Said amendments must be executed upon consent from 100% or the majority of the note holders for the value of the principal showing an open debt, according to the type of amendment. Some non-material clarifications or amendments may be made without the consent from the note holders.
Other relevant characteristics	Bonds issued by the subsidiary Vale Overseas Ltd.

Security	***Bonds*** **CVRD36**
Jurisdiction	United States of America
Quantity	*Bonds* are issued at the minimum value of US$ 2,000.00, always in multiples of US$ 1,000.00.
Global Face Value	US$ 2,500,000,000.00
Outstanding Debt Value at the end of the last fiscal year	US $2,518,619,79167
Issuing date	11/21/2006
Restriction to outstanding units	None
Convertibility into shares or granting the right to subscribe or acquire issuer shares	None

Table of Contents

Possibility of redemption	I. Possibilities of redemption • Redemption by means of payment of premium, at any time, of all bonds or part of the bonds, periodically, at Vale Overseas criterion. • Redemption due to changes in the tax law: if Vale or Vale Overseas are forced to maintain values greater than 15%, in the event of payment of interest over note, due to changes in the Brazilian or in Cayman tax law, Vale Overseas may redeem the entirety of the notes in advance. II. For calculating value of redemption: • The redemption value will be 100% of the principal value or the sum of the current value of the interest installments and the remaining principal, whichever is the greatest, deducted at the date of redemption at the rate equivalent to Treasury + 0.35% • Redemption due to changes in the tax law: The redemption value will be equal to 100% of the principal value plus the interests accrued up to the date of redemption.
Characteristics of *Bonds*	I. Maturity date: 11/21/36 II. Early maturity: if a default event occurs, which is not corrected or condoned, the trustee, as instructed by at least 25% of the note holders for the value of the principal showing an open debt, must declare the principal value, the interests accrued and any amount unpaid immediately due. The default events are described in the deed of issuance, including, but not limited to: • failure to pay interests, principal or premium, if any. • in relation to Vale, its subsidiaries (subsidiaries with total assets exceeding 10% of the total consolidated

assets of the group at the end of each fiscal year) and Vale Overseas: the occurrence of any default, in any transaction characterized as debt, that exceeds, in total, US$ 50 million and this default results in the effective acceleration of the debt.

- failure from Vale or Vale Overseas to comply with their covenants in relation to the note and this failure persists 60 days after Vale or Vale Overseas have received communication from the trustee or from at least 25% of the note holders reporting the non-compliance of the obligations. These obligations include, but are not limited to: (i) obligation not to conduct a merger or sale of the entirety of the assets or a significant part of the assets of Vale or Vale Overseas, with some exceptions and (ii) limitations to granting collateral in debt transactions, with some permitted exceptions.

- insolvency or bankruptcy.

- Vale Overseas notes become illegal, generating the acceleration of over US$ 50 million total.

- the collateral becomes invalid or unenforceable.

III. Interest: 6.875% per year

Table of Contents

IV. Guarantees: There is no granting of collateral. Vale guarantees, irrevocably and unconditionally, the full payment of the principal, interests and other amounts owed in relation to this note, in the event Vale Overseas fails to pay.

V. If the credit is secured or subordinate: N/A

VI. Possible restrictions imposed on the issuer, in relation to:

- distribution of dividends: There are no restrictions on dividend distribution by Vale. However, Vale Overseas may not declare or pay any dividends, without the trustee s consent, as instructed by at least 25% of the note holders for the value of the principal showing an open debt.

- disposal of determined assets: Vale and Vale Overseas may not, without the consent from the majority of the note holders, participate in a merger with another company or transfer all or a significant part of its assets to a third party, except, however that: (i) the company created by this consolidation or a third party that acquired said assets undertakes to make timely payments of the principal and interests and other obligations from Vale and Vale Overseas in the deed of issuance; (ii) no default event occurs as a result of the transaction; and (iii) Vale or Vale Overseas, as applicable, provide their trustee with a certification and a legal opinion attesting that the consolidation or transfer of assets meet the requirements set forth in item (ii).

- contracting of new debt: there are no restrictions to contracting new debts by Vale. Vale Overseas may issue debts instruments within the scope of the deed of issuance, but Vale Overseas may not contract any other type of loan or financing.

- issuing new securities: Vale Overseas may issue, without the consent from the note holders, new notes according to the terms and conditions applicable to Bond VALE 2036. In addition, Vale Overseas may issue new notes under other terms and conditions. Vale has the right to guarantee, without the consent from the note holders, debts from its subsidiaries and issue its own

debt.

- Corporate operations involving the issuer, its parent companies and subsidiaries:

- Vale Overseas and CVRD may not consolidate or merge with any other entity or, (a) in the case of Vale Overseas, transfer all or nearly all of its properties or assets to any other entity or (b) in the case of Vale, transfer all or nearly all of its mining properties or assets to any other entity without the consent of more than 50% of the note holders in amount of the outstanding principal, unless the corporation created or that substantially acquired all the assets or all properties expressly becomes liable as

Table of Contents

	the successor corporation for all the obligations of Vale Overseas and / or Vale. • Vale Overseas will do everything it can to preserve its legal existence updated in the Cayman Islands. • Vale shall always, directly or indirectly own 100% of the share capital of Vale Overseas. • Vale Overseas may not (i) engage in any business that is not related to the issuance of bonds or acquire and hold securities for the payment of bonds; (ii) have any subsidiary; or (iii) consolidate or merge with any other entity without the consent of the trustee under the guidance of at least 25% of the note holders in the amount of the outstanding principal. • Vale and Vale Overseas shall not be able to create or approve any amendments Vale Overseas articles of incorporation allowing Vale Overseas to engaged in any other activity without the consent of the trustee under the guidance of at least 25% of note holders in the amount of the outstanding principal.
Conditions to alter rights assured by the securities	VII. The fiduciary agent, indicating the key terms of the contract: The Bank of New York acts as a trustee of the notes within the scope of the deed of issuance and its main role is to secure investors rights. The deed of issuance, allows to amend the rights and obligations of Vale Overseas and the investors in the notes. Said amendments must be executed upon consent from 100% or the majority of the note holders for the value of the principal showing an open debt, according to the type of amendment. Some non-material clarifications or amendments may be made without the consent from the note holders.
Other relevant characteristics	Bonds issued by the subsidiary Vale Overseas Ltd.
Security	***Bonds*** **CVRD34**
Jurisdiction	United States of America
Quantity	*Bonds* are issued at the minimum value of US$ 2,000.00, always in multiples of US$ 1,000.00.
Global Face Value	US$ 500,000,000.00
Outstanding Debt Balance at the end of the last fiscal year	US$ 518,677,083.00
Issuing date	01/15/2004
Restriction to outstanding units	None
Convertibility into shares or granting the right to subscribe or acquire issuer shares	None

Possibility of redemption	I. Possibilities of redemption: Redemption due to changes in the tax law: if Vale or Vale Overseas are forced to maintain values greater than 15%, in the event of payment of interest over note, due to changes in

Table of Contents

	the Brazilian or in Cayman tax law, Vale Overseas may redeem the entirety of the notes in advance.
	II. For calculating value of redemption: The redemption value will be equal to 100% of the principal value plus the interests accrued up to the date of redemption.
Characteristics of *Bonds*	I. Maturity date: 01/17/34
	II. Early maturity: if a default event occurs, which is not corrected or condoned, the trustee, as instructed by at least 25% of the note holders for the value of the principal showing an open debt, must declare the principal value, the interests accrued and any amount unpaid immediately due. The default events are described in the deed of issuance, including, but not limited to: • failure to pay interests, principal or premium, if any. • in relation to Vale, its subsidiaries (subsidiaries with total assets exceeding 10% of the total consolidated assets of the group at the end of each fiscal year) and Vale Overseas: the occurrence of any default, in any transaction characterized as debt, that exceeds, in total, US$ 50 million and this default results in the effective acceleration of the debt. • failure from Vale or Vale Overseas to comply with their covenants in relation to the note and this failure persists 60 days after Vale or Vale Overseas have received communication from the trustee or from at least 25% of the note holders reporting the non-compliance of the obligations. These obligations include, but are not limited to: (i) obligation not to conduct a merger or sale of the entirety of the assets or a significant part of the assets of Vale or Vale Overseas, with some exceptions and (ii) limitations to granting collateral in debt transactions, with some permitted exceptions. • insolvency or bankruptcy. • If Vale Overseas notes become illegal, the trustee, upon guidance from at least 25% of bond holders in outstanding principal, will also immediately include the amount of principal, interest accrued and any due and unpaid amounts.

III. Interest: 8.25% per year.

IV. Guarantee: There is no granting of collateral. Vale guarantees, irrevocably and unconditionally, the full payment of the principal, interests and other amounts owed in relation to this note, in the event Vale Overseas fails to pay.

V. If the credit is secured or subordinate: N/A

Table of Contents

VI. Possible restrictions imposed on the issuer, in relation to:

- distribution of dividends: There are no restrictions on dividend distribution by Vale. However, Vale Overseas may not declare or pay any dividends, without the trustee s consent, as instructed by at least 25% of the note holders for the value of the principal showing an open debt.

- disposal of determined assets: Vale and Vale Overseas may not, without the consent from the majority of the note holders, participate in a merger with another company or transfer all or a significant part of its assets to a third party, except, however that: (i) the company created by this consolidation or a third party that acquired said assets undertakes to make timely payments of the principal and interests and other obligations from Vale and Vale Overseas in the deed of issuance; (ii) no default event occurs as a result of the transaction; and (iii) Vale or Vale Overseas, as applicable, provide their trustee with a certification and a legal opinion attesting that the consolidation or transfer of assets meet the requirements set forth in item (ii).

- contracting of new debt: there are no restrictions to contracting new debts by Vale. Vale Overseas may issue debts instruments within the scope of the deed of issuance, but Vale Overseas may not contract any other type of loan or financing, without the consent from the trustee, as instructed by at least 25% of the note holders for the value of the principal showing an open debt. Moody s must confirm in advance that the new issuance from Vale Overseas will not result in a lower rating granted for other open notes.

- issuing new securities: Vale Overseas may issue, without the consent from the note holders, new notes according to the terms and conditions applicable to Bond VALE 2034. In addition, Vale Overseas may issue new notes under other terms and conditions. Vale has the right to guarantee, without the consent from the note holders, debts from its subsidiaries and issue its own debt.

- Corporate operations involving the issuer, its parent companies or subsidiaries:

- Vale Overseas and CVRD may not consolidate or merge with any other entity or, (a) in the case of Vale Overseas, transfer all or nearly all of its properties or assets to any other entity or (b) in the case of Vale, transfer all or nearly all of its mining properties or assets to any other entity without the consent of more than 50% of the note holders in amount of the outstanding principal, unless the corporation created or that substantially acquired all the

Table of Contents

	assets or all properties expressly becomes liable as the successor corporation for all the obligations of Vale Overseas and / or Vale.
	• Vale Overseas will do everything it can to preserve its legal existence updated in the Cayman Islands.
	• Vale shall always, directly or indirectly own 100% of the share capital of Vale Overseas.
	• Vale Overseas may not (i) engage in any business that is not related to the issuance of bonds or acquire and hold securities for the payment of bonds ; (ii) have any subsidiary; or (iii) consolidate or merge with any other entity without the consent of the trustee under the guidance of at least 25% of the note holders in the amount of the outstanding principal.
	• Vale and Vale Overseas shall not be able to create or approve any amendments Vale Overseas s articles of incorporation allowing Vale Overseas to engaged in any other activity without the consent of the trustee under the guidance of at least 25% of note holders in the amount of the outstanding principal.
	VII. The fiduciary agent, indicating the key terms of the contract: The JPMorgan Chase Bank acts as a trustee of the notes within the scope of the deed of issuance and its main role is to secure investors rights
Conditions to alter rights assured by the securities	The deed of issuance, allows to amend the rights and obligations of Vale Overseas and the investors in the notes. Said amendments must be executed upon consent from 100% or the majority of the note holders for the value of the principal showing an open debt, according to the type of amendment. Some non-material clarifications or amendments may be made without the consent from the note holders.
Other relevant characteristics	Bonds issued by the subsidiary Vale Overseas Ltd.
Security	***Bonds*** **CVRD34B**
Jurisdiction	United States of America
Quantity	*Bonds* are issued at the minimum value of US$ 2,000.00, always in multiples of US$ 1,000.00.
Global Face Value	US$ 300,000,000.00
Outstanding Debt Balance at the end of the last fiscal year	US$311,275,004.00
Issuing date	02/11/2005

Restriction to outstanding units	None
Convertibility into shares or granting the right to subscribe or acquire issuer shares	None
Possibility of redemption	I. Possibilities of redemption: Redemption due to changes in the tax law: if Vale or Vale Overseas are forced to maintain values greater than 15%, in the event of payment of interest over note, due to changes in the Brazilian or in Cayman tax law, Vale Overseas may redeem the entirety of the notes in advance.

Table of Contents

II. For calculating value of redemption: The redemption value will be equal to 100% of the principal value plus the interests accrued up to the date of redemption.

Characteristics of *Bonds*

I. Maturity date: 01/17/34

II. Early maturity: if a default event occurs, which is not corrected or condoned, the trustee, as instructed by at least 25% of the note holders for the value of the principal showing an open debt, must declare the principal value, the interests accrued and any amount unpaid immediately due. The default events are described in the deed of issuance, including, but not limited to:

- failure to pay interests, principal or premium, if any.

- in relation to Vale, its subsidiaries (subsidiaries with total assets exceeding 10% of the total consolidated assets of the group at the end of each fiscal year) and Vale Overseas: the occurrence of any default, in any transaction characterized as debt, that exceeds, in total, US$ 50 million and this default results in the effective acceleration of the debt.
- failure from Vale or Vale Overseas to comply with their covenants in relation to the note and this failure persists 60 days after Vale or Vale Overseas have received communication from the trustee or from at least 25% of the note holders reporting the non-compliance of the obligations. These obligations include, but are not limited to: (i) obligation not to conduct a merger or sale of the entirety of the assets or a significant part of the assets of Vale or Vale Overseas, with some exceptions and (ii) limitations to granting collateral in debt transactions, with some permitted exceptions.

- insolvency or bankruptcy.

- If Vale Overseas notes become illegal, the trustee, upon guidance from at least 25% of bond holders in outstanding principal, will also immediately include the amount of principal, interest accrued and any due and unpaid amounts.

III. Interest: 8.25% per year.

IV. Guarantee: There is no granting of collateral. Vale guarantees, irrevocably and unconditionally, the full payment of the principal, interests and other amounts owed in relation to this note, in the event Vale Overseas fails to pay.

V. If the credit is secured or subordinate: N/A

VI. Possible restrictions imposed on the issuer, in relation to:

- distribution of dividends: There are no restrictions on dividend distribution by Vale.

Table of Contents

However, Vale Overseas may not declare or pay any dividends, without the trustee s consent, as instructed by at least 25% of the note holders for the value of the principal showing an open debt.

- disposal of determined assets: Vale and Vale Overseas may not, without the consent from the majority of the note holders, participate in a merger with another company or transfer all or a significant part of its assets to a third party, except, however that: (i) the company created by this consolidation or a third party that acquired said assets undertakes to make timely payments of the principal and interests and other obligations from Vale and Vale Overseas in the deed of issuance; (ii) no default event occurs as a result of the transaction; and (iii) Vale or Vale Overseas, as applicable, provide their trustee with a certification and a legal opinion attesting that the consolidation or transfer of assets meet the requirements set forth in item (ii).

- contracting of new debt: there are no restrictions to contracting new debts by Vale. Vale Overseas may issue debts instruments within the scope of the deed of issuance, but Vale Overseas may not contract any other type of loan or financing, without the consent from the trustee, as instructed by at least 25% of the note holders for the value of the principal showing an open debt. Moody s must confirm in advance that the new issuance from Vale Overseas will not result in a lower rating granted for other open notes.

- issuing new securities: Vale Overseas may issue, without the consent from the note holders, new notes according to the terms and conditions applicable to Bond VALE 2034. In addition, Vale Overseas may issue new notes under other terms and conditions. Vale has the right to guarantee, without the consent from the note holders, debts from its subsidiaries and issue its own debt.

- Corporate operations involving the issuer, its parent companies or subsidiaries:

- Vale Overseas and CVRD may not consolidate or merge with any other entity or, (a) in the case of Vale Overseas, transfer all or nearly all of its properties or assets to any other entity or (b) in the case of Vale, transfer all or nearly all of its mining properties or assets

to any other entity without the consent of more than 50% of the note holders in amount of the outstanding principal, unless the corporation created or that substantially acquired all the assets or all properties expressly becomes liable as the successor corporation for all the obligations of Vale Overseas and / or Vale.

Table of Contents

	• Vale Overseas will do everything it can to preserve its legal existence updated in the Cayman Islands. • Vale shall always, directly or indirectly own 100% of the share capital of Vale Overseas. • Vale Overseas may not (i) engage in any business that is not related to the issuance of bonds or acquire and hold securities for the payment of bonds ; (ii) have any subsidiary; or (iii) consolidate or merge with any other entity without the consent of the trustee under the guidance of at least 25% of the note holders in the amount of the outstanding principal. • Vale and Vale Overseas shall not be able to create or approve any amendments Vale Overseas articles of incorporation allowing Vale Overseas to engaged in any other activity without the consent of the trustee under the guidance of at least 25% of note holders in the amount of the outstanding principal.
	VII. The fiduciary agent, indicating the key terms of the contract: The JPMorgan Chase Bank acts as a trustee of the notes within the scope of the deed of issuance and its main role is to secure investors rights
Conditions to alter rights assured by the securities	The deed of issuance, allows to amend the rights and obligations of Vale Overseas and the investors in the notes. Said amendments must be executed upon consent from 100% or the majority of the note holders for the value of the principal showing an open debt, according to the type of amendment. Some non-material clarifications or amendments may be made without the consent from the note holders.
Other relevant characteristics	Bonds issued by the subsidiary Vale Overseas Ltd.
Security	**Bonds CVRD17**
Jurisdiction	United States of America
Quantity	*Bonds* are issued at the minimum value of US$ 2,000.00, always in multiples of US$ 1,000.00.
Global Face Value	US$ 1,250,000,000.00
Outstanding Debt Balance at the end of the last fiscal year	US$1,284,071,180.56
Issuing date	11/21/2006
Restriction to outstanding units	None
Convertibility into shares or granting the right to subscribe or acquire issuer shares	None
Possibility of redemption	I. Possibilities of redemption

- Redemption by means of payment of premium, at any time, of all bonds or part of the bonds periodically, at Vale Overseas criterion.

- Redemption due to changes in the tax law: if Vale or Vale Overseas are forced to maintain values greater than 15%, in the event of payment of interest over note, due to changes in the Brazilian or in Cayman tax law, Vale Overseas may redeem the entirety of the

Table of Contents

notes in advance.

II. Formula for calculating value of redemption:

- Redemption by means of payment of premium: The redemption value will be 100% of the principal value or the sum of the current value of the interest installments and the remaining principal, whichever is the greatest, deducted at the date of redemption at the rate equivalent to Treasury + 0.25%.

- Redemption due to changes in the tax law: The redemption value will be equal to 100% of the principal value plus the interests accrued up to the date of redemption.

Characteristics of *Bonds*

I. Maturity date: 01/23/17

II. Early maturity: if a default event occurs, which is not corrected or condoned, the trustee, as instructed by at least 25% of the note holders for the value of the principal showing an open debt, must declare the principal value, the interests accrued and any amount unpaid immediately due. The default events are described in the deed of issuance, including, but not limited to:

- failure to pay interests, principal or premium, if any.

- in relation to Vale, its subsidiaries (subsidiaries with total assets exceeding 10% of the total consolidated assets of the group at the end of each fiscal year) and Vale Overseas: the occurrence of any default, in any transaction characterized as debt, that exceeds, in total, US$ 50 million and this default results in the effective acceleration of the debt.

- failure from Vale or Vale Overseas to comply with their covenants in relation to the note and this failure persists 60 days after Vale or Vale Overseas have received communication from the trustee or from at least 25% of the note holders reporting the non-compliance of the obligations. These obligations include, but are not limited to: (i) obligation not to conduct a merger or sale of the entirety of the assets or a significant part of the assets of Vale or Vale Overseas, with some exceptions and (ii) limitations to granting collateral in debt transactions, with some permitted exceptions.

- insolvency or bankruptcy.

- Vale Overseas notes become illegal, generating the acceleration of over US$ 50 million total.

- the collateral becomes invalid or unenforceable.

III. Interest: 6.25% per year.

IV. Guarantee: There is no granting of collateral. Vale guarantees, irrevocably and unconditionally, the full payment of the principal, interests and other amounts owed in relation to this note, in the event Vale Overseas fails to pay.

Table of Contents

V. If the credit is secured or subordinate: N/A

VI. Possible restrictions imposed on the issuer, in relation to:

- distribution of dividends: There are no restrictions on dividend distribution by Vale. However, Vale Overseas may not declare or pay any dividends, without the trustee s consent, as instructed by at least 25% of the note holders for the value of the principal showing an open debt.

- disposal of determined assets: Vale and Vale Overseas may not, without the consent from the majority of the note holders, participate in a merger with another company or transfer all or a significant part of its assets to a third party, except, however that: (i) the company created by this consolidation or a third party that acquired said assets undertakes to make timely payments of the principal and interests and other obligations from Vale and Vale Overseas in the deed of issuance; (ii) no default event occurs as a result of the transaction; and (iii) Vale or Vale Overseas, as applicable, provide their trustee with a certification and legal opinion attesting that the consolidation or transfer of assets meet the requirements set forth in item (ii).

- contracting of new debt: there are no restrictions to contracting new debts by Vale. Vale Overseas may issue debts instruments within the scope of the deed of issuance, but Vale Overseas may not contract any other type of loan or financing without the trustee s consent, as instructed by at least 25% of the note holders for the value of the principal showing an open debt.

- issuing new securities: Vale Overseas may issue, without the consent from the note holders, new notes according to the terms and conditions applicable to Bond CVRD2017. In addition, Vale Overseas may issue new notes under other terms and conditions. Vale has the right to guarantee, without the consent from the note holders, debts from its subsidiaries and issue its own debt.

- Corporate operations involving the issuer, its parent companies or subsidiaries:

- Vale Overseas and CVRD may not consolidate or merge with any other entity or, (a) in the case of Vale Overseas, transfer all or nearly all of its properties or assets to any other entity or (b) in the case of Vale, transfer all or nearly all of its mining properties or assets to any other entity without the consent of more than 50% of the note

holders in amount of the outstanding principal, unless the corporation created or that substantially acquired all the assets or all properties expressly

Table of Contents

	becomes liable as the successor corporation for all the obligations of Vale Overseas and / or Vale. • Vale Overseas will do everything it can to preserve its legal existence updated in the Cayman Islands. • Vale shall always, directly or indirectly own 100% of the share capital of Vale Overseas. • Vale Overseas may not (i) engage in any business that is not related to the issuance of bonds or acquire and hold securities for the payment of bonds; (ii) have any subsidiary; or (iii) consolidate or merge with any other entity without the consent of the trustee under the guidance of at least 25% of the note holders in the amount of the outstanding principal. • Vale and Vale Overseas shall not be able to create or approve any amendments Vale Overseas articles of incorporation allowing Vale Overseas to engaged in any other activity without the consent of the trustee under the guidance of at least 25% of note holders in the amount of the outstanding principal.
	VII. The fiduciary agent, indicating the key terms of the contract: The Bank of New York acts as a trustee of the notes within the scope of the deed of issuance and its main role is to secure investors rights.
Conditions to alter rights assured by the securities	The deed of issuance, allows to amend the rights and obligations of Vale Overseas and the investors in the notes. Said amendments must be executed upon consent from 100% or the majority of the note holders for the value of the principal showing an open debt, according to the type of amendment. Some non-material clarifications or amendments may be made without the consent from the note holders.
Other relevant characteristics	Bonds issued by the subsidiary Vale Overseas Ltd.
Security	**Bonds CVRD16**
Jurisdiction	United States of America
Quantity	*Bonds* are issued at the minimum value of US$ 100,000.00, always in multiples of US$ 1,000.00.
Global Face Value	US$ 1,000,000,000.00
Outstanding Debt Balance at the end of the last fiscal year	US$1,029,340,277.78
Issuing date	01/10/2006
Restriction to outstanding units	None
Convertibility into shares or granting the right to subscribe or acquire issuer shares	None
Possibility of redemption	I. Possibility of redemption: Redemption due to changes in the tax law: Vale Overseas may only redeem the entirety of the notes in advance if Vale or Vale Overseas are forced to maintain values greater than 15%, in the event of payment of interest over note, due to changes in the Brazilian or in Cayman tax law.

709

Table of Contents

II. Formula for calculating value of redemption: The redemption value will be 100% of the principal value plus interests accrued up to the time of redemption.

Characteristics of *Bonds*

I. Maturity date: 01/11/16

II. Early maturity: if a default event occurs, which is not corrected or condoned, the trustee, as instructed by at least 25% of the note holders for the value of the principal showing an open debt, must declare the principal value, the interests accrued and any amount unpaid immediately due. The default events are described in the deed of issuance, including, but not limited to:

- failure to pay interests, principal or premium, if any.

- in relation to Vale, its subsidiaries (subsidiaries with total assets exceeding 10% of the total consolidated assets of the group at the end of each fiscal year) and Vale Overseas: the occurrence of any default, in any transaction characterized as debt, that exceeds, in total, US$ 50 million and this default results in the effective acceleration of the debt.

- failure from Vale or Vale Overseas to comply with their covenants in relation to the note and this failure persists 60 days after Vale or Vale Overseas have received communication from the trustee or from at least 25% of the note holders reporting the non-compliance of the obligations. These obligations include, but are not limited to: (i) obligation not to conduct a merger or sale of the entirety of the assets or a significant part of the assets of Vale or Vale Overseas, with some exceptions and (ii) limitations to granting collateral in debt transactions, with some permitted exceptions.

- insolvency or bankruptcy.

- If an event occurs that turns Vale Overseas notes illegal, the trustee as instructed by at least 25% of the note holders for the value of the principal showing an open debt, also declares the value of the principal, the interests accrued and any amount unpaid due immediately.

III. Interest: 6.25% per year

IV. Guarantee: There is no granting of collateral. Vale guarantees, irrevocably and unconditionally, the full payment of the principal, interests and other amounts owed in

relation to this note, in the event Vale Overseas fails to pay.

V. If the credit is secured or subordinate: N/A

VI. Possible restrictions imposed on the issuer, in relation to:

- distribution of dividends: There are no restrictions on dividend distribution by Vale. However, Vale

Table of Contents

Overseas may not declare or pay any dividends, without the trustee s consent, as instructed by at least 25% of the note holders for the value of the principal showing an open debt.

- disposal of determined assets: Vale and Vale Overseas may not, without the consent from the majority of the note holders, participate in a merger with another company or transfer all or a significant part of its assets to a third party, except, however that: (i) the company created by this consolidation or a third party that acquired said assets undertakes to make timely payments of the principal and interests and other obligations from Vale and Vale Overseas in the deed of issuance; (ii) no default event occurs as a result of the transaction; and (iii) Vale or Vale Overseas, as applicable, provide their trustee with a certification and a legal opinion attesting that the consolidation or transfer of assets meet the requirements set forth in item (ii).

- contracting of new debt: there are no restrictions to contracting new debts by Vale. Vale Overseas may issue debts instruments within the scope of the deed of issuance, but Vale Overseas may not contract any other type of loan or financing without the trustee s consent, as instructed by at least 25% of the note holders for the value of the principal showing an open debt.

- issuing new securities: Vale Overseas may issue, without the consent from the note holders, new notes according to the terms and conditions applicable to Bond CVRD 2016. In addition, Vale Overseas may issue new notes under other terms and conditions. Vale has the right to guarantee, without the consent from the note holders, debts from its subsidiaries and issue its own debt.

- Corporate operations involving the issuer, its parent companies or subsidiaries:

- Vale Overseas and CVRD may not consolidate or merge with any other entity or, (a) in the case of Vale Overseas, transfer all or nearly all of its properties or assets to any other entity or (b) in the case of Vale, transfer all or nearly all of its mining properties or assets to any other entity without the consent of more than 50% of the note holders in amount of the outstanding principal, unless the corporation created or that substantially acquired all the assets or all properties expressly becomes liable as the successor corporation for all the obligations of Vale Overseas and / or Vale.

- Vale Overseas will do everything it can to preserve its legal existence updated in the Cayman Islands.

- Vale shall always, directly or indirectly own 100% of the share capital of Vale Overseas.

Table of Contents

	• Vale Overseas may not (i) engage in any business that is not related to the issuance of bonds or acquire and hold securities for the payment of bonds; (ii) have any subsidiary; or (iii) consolidate or merge with any other entity without the consent of the trustee under the guidance of at least 25% of the note holders in the amount of the outstanding principal. • Vale and Vale Overseas shall not be able to create or approve any amendments Vale Overseas articles of incorporation allowing Vale Overseas to engaged in any other activity without the consent of the trustee under the guidance of at least 25% of note holders in the amount of the outstanding principal. •
	VII. The fiduciary agent, indicating the key terms of the contract: The JPMorgan Chase Bank acts as a trustee of the notes within the scope of the deed of issuance and its main role is to secure investors rights.
Conditions to alter rights assured by the securities	The deed of issuance allows to amend the rights and obligations of Vale Overseas and the investors in the notes. Said amendments must be executed upon consent from 100% or the majority of the note holders for the value of the principal showing an open debt, according to the type of amendment. Some non-material clarifications or amendments may be made without the consent from the note holders.
Other relevant characteristics	Bonds issued by the subsidiary Vale Overseas Ltd.
Security	**Eurobonds CVRD18**
Jurisdiction	New York
Quantity	*Bonds* are issued at the minimum value of EUR 50,000.00, always in multiples of EUR 1,000.00.
Global Face Value	EUR 750,000,000.00
Outstanding Debt Balance at the end of the last fiscal year	EUR 775,351,027.40
Issuing date	03/24/2010
Restriction to outstanding units	None
Convertibility into shares or granting the right to subscribe or acquire issuer shares	None
Possibility of redemption	I. Possibilities of redemption: • Redemption by means of payment of premium, at any time, of all bonds or part of the bonds, periodically, at Vale s criterion. • Redemption due to changes in the tax law: Vale may pay the entirety of the notes in advance if Vale is forced to maintain values greater than 15%, in the event of payment of interest over note, due to changes in the Brazilian tax law. II. Formula for calculating value of redemption:

- Redemption by means of payment of premium: The redemption value will be 100% of the principal value or the sum of the current value of the interest installments and the remaining principal, whichever is the greatest, deducted at the date of redemption at the rate equivalent to Bund Rate (German Bund instruments) + 0.25%.

- b) Redemption due to changes in the tax law: The redemption

Table of Contents

value will be equal to 100% of the principal value plus the interests accrued up to the date of redemption.

Characteristics of *Bonds*

I. Maturity date: 03/24/2018

II. Early maturity: if a default event occurs, which is not corrected or condoned, the trustee, as instructed by at least 25% of the note holders for the value of the principal showing an open debt, must declare the principal value, the interests accrued and any amount unpaid immediately due. The default events are described in the deed of issuance, including, but not limited to:

- failure to pay interests, principal or premium, if any.
- in relation to Vale and its subsidiaries (subsidiaries with total assets exceeding 10% of the total consolidated assets of the group at the end of each fiscal year): the occurrence of any default, in any transaction characterized as debt, that exceeds, in total, US$ 50 million and this default results in the effective acceleration of the debt.
- failure from Vale to comply with its covenants in relation to the note and this failure persists 60 days after Vale has received communication from the trustee or from at least 25% of the note holders reporting the non-compliance of the obligations. These obligations include, but are not limited to: (i) obligation not to conduct a merger or sale of the entirety of the assets or a significant part of the assets of Vale, with some exceptions and (ii) limitations to granting collateral in debt transactions, with some permitted exceptions.
- insolvency or bankruptcy.
- notes issued by Vale Overseas Limited become illegal, generating the acceleration of over US$ 50 million total.
- the collateral becomes invalid or unenforceable.

III. Interest: 4.375% per year

IV. Guarantee: The notes are obligations unsecured by Vale and do not hold privileges over other Vale unsecured debts.

V. If the credit is secured or subordinate: N/A.

VI. Possible restrictions imposed on the issuer, in relation to:

- distribution of dividends: There are no restrictions on dividend distribution by Vale.

- disposal of determined assets: Vale may not, without the consent from the majority of the note holders, participate in a merger with another company or transfer all or a significant part of its assets to a third party, except, however that: (i) the company created by this consolidation or a third party that acquired said assets undertakes to make timely payments of the principal and interests and other obligations from Vale in the deed of issuance; (ii) no default event occurs as a result of the transaction; and (iii) Vale, as applicable, provide their trustee with a certification and a legal opinion attesting that the consolidation or transfer of assets meet the requirements set forth in item (ii).

Table of Contents

- contracting of new debt: there are no restrictions to contracting new debts by Vale.

- issuing new securities: Vale may issue, without the consent from the note holders, new notes according to the terms and conditions applicable to Eurobonds CVRD18. In addition, Vale may issue new notes under other terms and conditions.

- corporate operations involving the issues, controlling companies of subsidiaries: Vale may not consolidate or merge with any other company and it may not transferred all or a substantial number of its mining properties or assets without consent from more than 50% of the note holders in the outstanding principal, except when the new corporation or the corporation that substantially acquires all assets or all properties expressly become liable as the successor for all Vale obligations.

	VII. The fiduciary agent, indicating the key terms of the contract: The Bank of New York Mellon acts as a trustee of the notes within the scope of the deed of issuance and its main role is to secure investors rights.
Conditions to alter rights assured by the securities	The deed of issuance allows amending the rights and obligations of Vale and the investors in the notes. Said amendments may only be executed by Vale and the trustee with the consent from 100% or the majority of the note holders for the value of the principal showing an open debt, pursuant to the type of amendment. Some non-material clarifications or amendments may be made without the consent from the note holders.
Other relevant characteristics	Bond issued by Vale S.A.
Security	**Bonds CVRD20**
Jurisdiction	United States of America
Quantity	*Bonds* are issued at the minimum value of US$ 2,000.00, always in multiples of US$ 1,000.00.
Global Face Value	US$ 1,000,000,000.00
Outstanding Debt Balance at the end of the last fiscal year	US$ 1,013,489,583.33
Issuing date	09/15/2010
Restriction to outstanding units	None
Convertibility into shares or granting the right to subscribe or acquire issuer shares	None
Possibility of redemption	I. Possibilities of redemption:

- Redemption by means of payment of premium, at any time, of all bonds or part of the bonds, periodically, at Vale Overseas criterion.

- Redemption due to changes in the tax law: Vale Overseas may redeem the entirety of the notes in advance if Vale or Vale Overseas are forced to maintain values greater than 15%, in the event of payment of interest over note, due to changes in the Brazilian or Cayman tax law.

Table of Contents

II. Formula for calculating value of redemption:

- The redemption value will be 100% of the principal value or the sum of the current value of the interest installments and the remaining principal, whichever is the greatest, deducted at the date of redemption at the rate equivalent to Treasury + 0.30%.

- Redemption due to changes in the tax law: The redemption value will be equal to 100% of the principal value plus the interests accrued up to the date of redemption.

Characteristics of *Bonds*

I. Maturity date: 09/15/2020

II. Possibility of Early maturity: if a default event occurs, which is not corrected or condoned, the trustee, as instructed by at least 25% of the note holders for the value of the principal showing an open debt, must declare the principal value, the interests accrued and any amount unpaid immediately due. The default events are described in the deed of issuance, including, but not limited to:

- failure to pay interests, principal or premium, if any.

- in relation to Vale, its Relevant Subsidiaries (any subsidiary in which the proportional participation of Vale in the total assets of the subsidiary exceeds 10% of the total consolidated assets of the company at the end of the last financial year), and Vale Overseas: the occurrence of any default, in any transaction characterized as debt, that exceeds, in total, US$ 50 million and this default results in the effective acceleration of the debt.

- failure from Vale or Vale Overseas to comply with its covenants in relation to the note and this failure persists 60 days after Vale or Vale Overseas have received communication from the trustee or from at least 25% of the note holders reporting the non-compliance of the obligations. These obligations include, but are not limited to: (i) obligation not to conduct a merger or sale of the entirety of the assets or a significant part of the assets of Vale or Vale Overseas, with some exceptions and (ii) limitations to granting collateral in debt transactions, with some permitted exceptions.

- insolvency or bankruptcy.

- Vale Overseas notes become illegal, generating the acceleration of over US$ 50 million total.

- the collateral becomes invalid or unenforceable.

III. Interest: 4.625% per year

IV. Guarantee: There is no granting of collateral. Vale guarantees, irrevocably and unconditionally, the full payment of the principal, interests and other amounts owed in relation to this note, in the event Vale Overseas fails to pay.

Table of Contents

V. If the credit is secured or subordinate: N/A

VI. Possible restrictions imposed on the issuer, in relation to:

- distribution of dividends: There are no restrictions on dividend distribution by Vale. However, Vale Overseas may not declare or pay any dividends, without the trustee s consent, as instructed by at least 25% of the note holders for the value of the principal showing an open debt.

- disposal of determined assets: Vale and Vale Overseas may not, without the consent from the majority of the note holders, participate in a merger with another company or transfer all or a significant part of its assets to a third party, except, however that: (i) the company created by this consolidation or a third party that acquired said assets undertakes to make timely payments of the principal and interests and other obligations from Vale and Vale Overseas in the deed of issuance; (ii) no default event occurs as a result of the transaction; and (iii) Vale or Vale Overseas, as applicable, provide their trustee with a certification and a legal opinion attesting that the consolidation or transfer of assets meet the requirements set forth in item (ii).

- contracting of new debt: there are no restrictions to contracting new debts by Vale. Vale Overseas may issue debts instruments within the scope of the deed of issuance, but Vale Overseas may not contract any other type of loan or financing.

- issuing new securities: Vale Overseas may issue, without the consent from the note holders, new notes according to the terms and conditions applicable to Bonds CVRD20. In addition, Vale Overseas may issue new notes under other terms and conditions. Vale has the right to guarantee, without the consent from the note holders, its subsidiaries debts and issue its own debt.

- Corporate operations involving the issuer, its parent companies or subsidiaries:

- Vale Overseas and CVRD may not consolidate or merge with any other entity or, (a) in the case of Vale Overseas, transfer all or nearly all of its properties or assets to any other entity or (b) in the case of Vale, transfer all or nearly all of its mining properties or assets to any other entity without the consent of more than 50% of the note holders in amount of the outstanding principal, unless the corporation created or that substantially acquired all the assets or all properties

expressly becomes liable as the successor corporation for all the obligations of Vale Overseas and / or Vale.

- Vale Overseas will do everything it can to preserve its legal existence updated in the Cayman Islands.

Table of Contents

	• Vale shall always, directly or indirectly own 100% of the share capital of Vale Overseas.
	• Vale Overseas may not (i) engage in any business that is not related to the issuance of bonds or acquire and hold securities for the payment of bonds ; (ii) have any subsidiary; or (iii) consolidate or merge with any other entity without the consent of the trustee under the guidance of at least 25% of the note holders in the amount of the outstanding principal.
	• Vale and Vale Overseas shall not be able to create or approve any amendments Vale Overseas articles of incorporation allowing Vale Overseas to engaged in any other activity without the consent of the trustee under the guidance of at least 25% of note holders in the amount of the outstanding principal.
	VII. The fiduciary agent, indicating the key terms of the contract: The Bank of New York acts as a trustee of the notes within the scope of the deed of issuance and its main role is to secure investors rights
Conditions to alter rights assured by the securities	The deed of issuance allows to amend the rights and obligations of Vale Overseas and the investors in the notes. Said amendments must be executed upon consent from 100% or the majority of the note holders for the value of the principal showing an open debt, according to the type of amendment. Some non-material clarifications or amendments may be made without the consent from the note holders.
Other relevant characteristics	Bonds issued by the subsidiary Vale Overseas Ltd.
Security	**Bonds CVRD39**
Jurisdiction	United States of America
Quantity	*Bonds* are issued at the minimum value of US$ 2,000, always in multiples of US$ 1,000.00.
Global Face Value	US$ 750,000,000.00
Outstanding Debt Balance at the end of the last fiscal year	US$ 757,161,458.33
Issuing date	05/10/2010
Restriction to outstanding units	None
Convertibility into shares or granting the right to subscribe or acquire issuer shares	None
Possibility of redemption	I. Possibilities of redemption:
	• Redemption by means of payment of premium, at any time, of all bonds or part of the bonds, periodically, at Vale Overseas criterion.

- Redemption due to changes in the tax law: Vale Overseas may redeem the entirety of the notes in advance if Vale or Vale Overseas are forced to maintain values greater than 15%, in the event of payment of interest over note, due to changes in the Brazilian or Cayman tax law.

II. Formula for calculating value of redemption:

- The redemption value will be 100% of the principal value or the

Table of Contents

sum of the current value of the interest installments and the remaining principal, whichever is the greatest, deducted at the date of redemption at the rate equivalent to Treasury + 0.40%.

- Redemption due to changes in the tax law: The redemption value will be equal to 100% of the principal value plus the interests accrued up to the date of redemption.

Characteristics of *Bonds*

I. Maturity date: 11/10/2039

II. Possibility of Early maturity: if a default event occurs, which is not corrected or condoned, the trustee, as instructed by at least 25% of the note holders for the value of the principal showing an open debt, must declare the principal value, the interests accrued and any amount unpaid immediately due. The default events are described in the deed of issuance, including, but not limited to:

- failure to pay interests, principal or premium, if any.

- in relation to Vale, its subsidiaries (any subsidiary in which the proportional participation of Vale in the total assets of the subsidiary exceeds 10% of the total consolidated assets of the company at the end of the last financial year): the occurrence of any default, in any transaction characterized as debt, that exceeds, in total, US$ 50 million and this default results in the effective acceleration of the debt.

- failure from Vale or Vale Overseas to comply with its covenants in relation to the note and this failure persists 60 days after Vale has received communication from the trustee or from at least 25% of the note holders reporting the non-compliance of the obligations. These obligations include, but are not limited to:
(i) obligation not to conduct a merger or sale of the entirety of the assets or a significant part of the assets of Vale or Vale Overseas, with some exceptions and (ii) limitations to granting collateral in debt transactions, with some permitted exceptions.

- insolvency or bankruptcy.

- notes issued by Vale Overseas become illegal, generating the acceleration of over US$ 50 million total.

- the collateral becomes invalid or unenforceable.

III. Interest: 6.875% per year

IV. Guarantee: There is no granting of collateral. Vale guarantees, irrevocably and unconditionally, the full payment of the principal, interests and other amounts owed in relation to this note, in the event Vale Overseas fails to pay.

Table of Contents

V. If the credit is secured or subordinate: N/A

VI. Possible restrictions imposed on the issuer, in relation to:

- distribution of dividends: There are no restrictions on dividend distribution by Vale. However, Vale Overseas may not declare or pay any dividends, without the trustee s consent, as instructed by at least 25% of the note holders for the value of the principal showing an open debt.

- disposal of determined assets: Vale and Vale Overseas may not, without the consent from the majority of the note holders, participate in a merger with another company or transfer all or a significant part of its assets to a third party, except, however that: (i) the company created by this consolidation or a third party that acquired said assets undertakes to make timely payments of the principal and interests and other obligations from Vale and Vale Overseas in the deed of issuance; (ii) no default event occurs as a result of the transaction; and (iii) Vale or Vale Overseas, as applicable, provide their trustee with a certification and a legal opinion attesting that the consolidation or transfer of assets meet the requirements set forth in item (ii).

- contracting of new debt: there are no restrictions to contracting new debts by Vale. Vale Overseas may issue debts instruments within the scope of the deed of issuance, but Vale Overseas may not contract any other type of loan or financing.

- issuing new securities: Vale Overseas may issue, without the consent from the note holders, new notes according to the terms and conditions applicable to Bond CVRD39. In addition, Vale Overseas may issue new notes under other terms and conditions. Vale has the right to guarantee, without the consent from the note holders, its subsidiaries debts and issue its own debt.

- Corporate operations involving the issuer, its parent companies or subsidiaries:

- Vale Overseas and CVRD may not consolidate or merge with any other entity or, (a) in the case of Vale Overseas, transfer all or nearly all of its properties or assets to any other entity or (b) in the case of Vale, transfer all or nearly all of its mining properties or assets to any other entity without the consent of more than 50% of the note holders in amount of the outstanding principal, unless the corporation created or that substantially acquired all the assets or all properties expressly

becomes liable as the successor corporation for all the obligations of Vale Overseas and / or Vale.

- Vale Overseas will do everything it can to preserve its legal existence updated in the Cayman Islands.

Table of Contents

- Vale shall always, directly or indirectly own 100% of the share capital of Vale Overseas.

- Vale Overseas may not (i) engage in any business that is not related to the issuance of bonds or acquire and hold securities for the payment of bonds; (ii) have any subsidiary; or (iii) consolidate or merge with any other entity without the consent of the trustee under the guidance of at least 25% of the note holders in the amount of the outstanding principal.

- Vale and Vale Overseas shall not be able to create or approve any amendments Vale Overseas articles of incorporation allowing Vale Overseas to engaged in any other activity without the consent of the trustee under the guidance of at least 25% of note holders in the amount of the outstanding principal.

VII. The fiduciary agent, indicating the key terms of the contract: The Bank of New York Mellon acts as a trustee of the notes within the scope of the deed of issuance and its main role is to secure investors rights

Conditions to alter rights assured by the securities	The deed of issuance allows to amend the rights and obligations of Vale Overseas and the investors in the notes. Said amendments must be executed upon consent from 100% or the majority of the note holders for the value of the principal showing an open debt, according to the type of amendment. Some non-material clarifications or amendments may be made without the consent from the note holders.
Other relevant characteristics	None
Security	***Bonds*** **Inco 2032**
Jurisdiction	United States of America
Quantity	Bonds are issued at the minimum value of US$ 1,000.00
Global Face Value	US$ 400,000,000.00
Outstanding Debt Balance at the end of the last fiscal year	US$ 408,400,000.00
Issuing date	09/23/2002
Restriction to outstanding units	None
Convertibility into shares or granting the right to subscribe or acquire issuer shares	None
Possibility of redemption	I. Possibilities of redemption:

- Redemption by means of payment of premium, at any time, at Vale Canada s criterion.

- Redemption due to changes in the tax law: if Vale Canada is forced to pay additional values to note holders, due to changes in the Canadian tax law.

II. Formula for calculating value of redemption:

- The redemption value will be 100% of the principal value or the sum of the current value of the interest installments and the remaining principal, whichever is the greatest, deducted at the date of redemption at the rate equivalent to Treasury + 0.40%

Table of Contents

- Redemption due to changes in the tax law: The redemption value will be equal to 100% of the principal value plus the interests to any additional values established by the Canadian tax law up to the date of redemption.

Characteristics of *Bonds*

I. Maturity date: 10/15/2015

II. Possibility of Early Maturity: if a default event occurs, which is not corrected or condoned, the trustee, as instructed by at least 25% of the note holders for the value of the principal showing an open debt, must declare the principal value, the interests accrued and any amount unpaid immediately due. The default events are described in the deed of issuance, including, but not limited to:

- failure to pay interests, principal or premium, if any.
- in relation to Vale Canada: the occurrence of any default, in any transaction characterized as debt that results in the effective acceleration of the debt.
- insolvency or bankruptcy by Vale Canada in Canada.
- failure from Vale Canada to comply with its covenants in relation to the notes. These obligations include, but are not limited to: (i) obligation not to conduct a merger or sale of the entirety of the assets or a significant part of the assets of Vale Canada, with some exceptions and (ii) limitations to granting collateral in debt transactions, with some permitted exceptions.

III. Interest: 7,.2% per year

IV. Guarantee: There is no granting of collateral by Vale Canada or its Relevant subsidiaries.

V. If the credit is secured or subordinate: N/A

VI. Possible restrictions imposed on the issuer, in relation to:

- distribution of dividends: There are no restrictions on dividend distribution by Vale Canada.

- disposal of determined assets: Vale Canada may not participate in a merger with another company or transfer all or a significant part of its assets to a third party, except, however that: (i) the company created by this consolidation or a third party that acquired said assets undertakes to make timely payments of the principal and interests and other obligations from Vale Canada in the deed of issuance; (ii) no default event occurs as a result of the transaction; (iii) Vale Canada, as the case may be, provides its trustee with a certification attesting to the consolidation or transfer of assets; and (iv) if the company created by means of this consolidation or a third party acquisition of said assets were outside Canada, the Canadian tax law requirements must be

Table of Contents

met.

- contracting of new debt: there are no restrictions to contracting new debts by Vale Canada.

- issuing new securities: Vale Canada may issue, without the consent from the note holders, new notes according to the deed of issuance terms and conditions. In addition, Vale Canada may issue new notes under other terms and conditions. Vale has the right to guarantee, without the consent from the note holders, its subsidiaries debts and issue its own debt.

- corporate deals involving the issuer, parent company or subsidiaries:

- Vale Canada Limited shall not consolidate, incorporate or merge with any other corporation or make statutory arrangements in which Vale Canada Limited participates, sells, transports or leases all assets or a substantial part of the assets of its property, unless (1) immediately after the consolidation, incorporation or merger, statutory arrangement, sale, transport or lease of the created or subsisting corporation after said consolidation, incorporation or merger, statutory arrangement, sale, transport or lease does not default in performance or compliance with any terms, covenants, and conditions of the deed of debenture maintained by Vale Canada; (2) payments of principal and interest on the debentures and the performance and compliance with all covenants and conditions expressed in the deed of debenture will be taken over by an additional satisfactory deed of debenture to be executed and delivered to trustee by the created or subsisting corporations after such consolidation, incorporation or merger, statutory arrangement, sale, transport or lease; and, (3) if the created or subsisting corporation after consolidation, incorporation or merger, statutory arrangement, sale, transport or lease is governed by the laws of another jurisdiction, that is not Canada or the United States or any of its provinces, territories, states or districts (relevant tax jurisdiction), Vale Canada Limited or the successor corporation shall be liable, under the additional deed of debenture accepted by the trustee to settle all payment of debentures without withholding or deduction, to settle all taxes and legal fees (specific fee) in the present or in the future that are demanded by the relevant jurisdiction, unless Vale Canada Limited is required to or charged for, by the law of by the administrator s interpretation, to withhold or deduct said specific taxes.

VII. The fiduciary agent, indicating the key terms of the contract: The Bank of New York Mellon acts as a trustee of the notes within the scope of the deed of issuance and its main role is to secure investors rights.

Conditions to alter rights assured by the securities	The deed of issuance allows, with certain exceptions, to amend the rights and obligations of Vale Canada and the investors in the notes. Depending on the type of changes, said amendments may be executed by Vale Canada and the trustee with the consent from the note holders.

Table of Contents

	In most cases, the note holders may approve changes to the note with the consent from 66.67% of the note holders for the value of the principal showing an open debt. Some non-material clarifications and changes may be made without the note holders consent.
Other relevant characteristics	Bonds issued by the subsidiary Vale Canada Ltd.

Following is information on the trading volume as well as on the highest and lowest prices of Vale s ADSs:

Vale ON - ADS VALE	**Average Daily Volume (US$ Thousand)**	**Highest Price (US$) (1)**	**Lowest Price (US$) (1)**
1st Quarter 2013	314.581	21.5	16.98
2nd Quarter 2013	303.434	18.3	12.9
3rd Quarter 2013	268.379	16.8	12.6
4th Quarter 2013	254.069	17.1	14.4
1st Quarter 2014	296.601	14.7	12.4
2nd Quarter 2014	252.659	15.1	12.6
3rd Quarter 2014	266.205	14.8	10.9
4th Quarter 2014	270.816	11.8	6.9
1st Quarter 2015	207.376	8.7	5.7
2nd Quarter 2015	228.676	8.8	5.6
3rd Quarter 2015	139.050	5.9	4.0
4th Quarter 2015	101.281	5.5	3.1

Vale PNA - ADS VALE.P	**Average Daily Volume (US$ Thousand)**	**Highest Price (US$) (1)**	**Lowest Price (US$) (1)**
1st Quarter 2013	166.244	20.9	16.2
2nd Quarter 2013	131.400	17.1	11.9
3rd Quarter 2013	111.843	14.9	11.5
4th Quarter 2013	94.476	15.3	13.3
1st Quarter 2014	89.433	13.3	10.9
2nd Quarter 2014	90.581	13.6	11.2
3rd Quarter 2014	79.936	13.2	9.5
4th Quarter 2014	114.440	10.3	5.9
1st Quarter 2015	71.559	7.6	4.8
2nd Quarter 2015	86.600	6.7	4.8
3rd Quarter 2015	47.298	5.0	3.2
4th Quarter 2015	37.171	4.3	2.4
Source: Bloomberg			

(1) Based on closing prices

Table of Contents

19.1 Information about buy-back plans for shares of the issuer

Justification to not fill in the table:

There was no plan for the repurchase of shares in the last three fiscal years

Table of Contents

19.2 - Movement of the securities held in the Treasury

Fiscal year ended 12/31/2015

Shares

Type of share	Class of preferred share	Description of securities
Common		

Movement	Quantity	Total Value (Reais)
Initial amount	31,535,402	
Amount acquired		
Amount sold		
Weighted average sale price		
Amount canceled		
Final amount		
Final balance	31,535,402	
Percentage relative to securities of the same class and type in circulation	1.0%	1.0%

Type of share	Class of preferred share	Description of securities
Preferred	Class A Preferred	

Movement	Quantity	Total Value (Reais)
Initial amount	59,405,792	
A Amount acquired		
Weighted average acquisition price		
Amount sold		
Weighted average sale price		
Amount canceled		
Final amount	59,405,792	
Percentage relative to securities of the same class and type in circulation	2.9%	2.9%

Table of Contents

Fiscal year ended 12/31/2014

Shares

Type of share	Class of preferred share	Description of securities
Common	Class A Preferred	

Movement	Quantity	Total Value (Reais)
Initial amount	71,071,482	
Amount acquired		
Weighted average acquisition price		
Amount sold		
Weighted average sale price		
Amount canceled	39,536,080	
Final amount	31,535,402	
Percentage relative to securities of the same class and type in circulation	1.0%	1.0%

Type of share	Class of preferred share	Description of securities
Preferred	Class A Preferred	

Movement	Quantity	Total Value (Reais)
Initial amount	140,858,692	
Amount acquired		
Weighted average acquisition price		
Amount sold		
Weighted average sale price		
Amount canceled	81,451,900	
Final amount	59,405,792	
Percentage relative to securities of the same class and type in circulation	2.9%	2.9%

Table of Contents

Fiscal year ended 12/31/2013

Shares

Type of share	Class of preferred share	Description of securities
Common		

Movement	Quantity	Total Value (Reais)
Initial amount	71,071,482	
Amount acquired		
Weighted average acquisition price		
Amount sold		
Weighted average sale price		
Amount canceled		
Final amount	71,071,482	
Percentage relative to securities of the same class and type in circulation	2.2%	2.2%

Type of share	Class of preferred share	Description of securities
Preferred	Class A	

Movement	Quantity	Total Value (Reais)
Initial amount	140,857,692	
Amount acquired		
Weighted average acquisition price		
Amount sold		
Weighted average sale price		
Amount canceled		
Final amount	140,857,692	
Percentage relative to securities of the same class and type in circulation	6.7%	6.7%

Table of Contents

19.3 Other relevant information

On February 19, 2001, there was approval, at the Extraordinary General Meeting, for the incorporation of shares held by minority shareholders in subsidiary MINERAÇÃO DA TRINDADE S.A (SAMITRI), without an increase in capital and without issuing new shares in Vale by using shares held in the Treasury, in accordance with the authorization by the CVM (Brazilian SEC) on December 13, 2000, pursuant to article 23 of the CVM Instruction No. 10 of February 14, 1980. As a result of the incorporation of SAMITRI shares into Vale s equity, the minority shareholders of SAMITRI received class A Vale preferred shares (PNA), issued by Vale and maintained in the

Treasury by the Company, at a rate of one (1) share issued by Vale per lot of 628 (six hundred and twenty-eight) SAMITRI shares. With this operation, Samitri became a wholly owned subsidiary of Vale. Those holding SAMITRI shares in the name of the bearer, who contact Vale, will have their shares updated and converted into Vale PNA shares, in the proportion informed above. In this way, the Treasury shares have been disposed of in the period from 2009 to 2011 (43,800 PNA shares in 2009, 24 PNA shares in 2010, and no shares in 2011) on account of the upgrade of bearer bonds for the minority shareholders of SAMITRI.

For information on Company financial operations through the use of financial instruments, including derivatives, see item 5.2 in this Reference Form.

20.1 Information about the securities trading policy

Date of approval	**1/19/2011**
Office and/or position held by related parties	Vale Valepar S.A, (controller of the Company) Representatives of the shareholders of Valepar S.A. Members of the Board of Directors of Valepar Members of the Board of Directors of Vale Members of the Supervisory Board of Vale Members of the Statutory Audit Committee of Vale Members of the Advisory Committees to the Board of Directors of Vale, Executive officers, global directors, department directors, general managers, executive coordinators, coordinators, managers, and other employees who, because of their office, function, or position in the Company and its subsidiaries, have knowledge of inside information. Publicly held companies controlled by the Company.

Main characteristics

Vale s Trading Policy, formulated in accordance with the CVM Instruction No. 358/02 and Vale s Code of Ethical Conduct, aims to contribute to the orderly trading of securities issued by Vale, or its related companies, removing any suspected misuse of information concerning material events or facts about Vale (Insider Information).

The Trading Policy also aims to contribute to compliance with laws and regulations of the United States and Hong Kong, where Vale shares are traded in the stock exchanges in the form of ADRs and HDRs, respectively, that prohibit insider trading / dealing (using insider information for their own benefit), including the practice of tipping (providing insider information for third parties to benefit from it).

For purposes of the laws and regulations of the United States of America, a person engages in practices of (i) insider trading if he buys or sells securities using relevant and not publicly-disclosed information (material non-public information) that has been obtained or used in breach of a duty of trust and

Table of Contents

confidentiality (duty of trust and confidence), and (ii) tipping if he provides the same type of information to third parties who end up taking advantage of this information to perform insider trading.

For purposes of the laws and regulations of Hong Kong, a person engages in practices of insider dealing when, having material non-public information, he negotiates or encourages third parties to negotiate Vale s securities, or he provides the same type of information to third parties knowing, or expecting, that they will, indeed, negotiate Vale s securities.

The prohibitions contained in this Trading Policy cover any acquisition, sale, or transfer of securities issued or guaranteed by Vale.

Companies opened under the control of Vale shall adopt the Company s Trading Policy, applying, where appropriate, the same prohibitions and/or restrictions disciplined by Vale s Trading Policy.

Table of Contents

Any violation of the provisions of the Company s Trading Policy shall be deemed a breach of the Code of Ethical Conduct of Vale and be subject to the penalties provided by law and responsibility for losses and damages caused to Vale and to third parties, in addition to any proceedings and penalties established in the Code of Ethical Conduct of Vale.

Blackout periods for trading and description of the oversight procedures	Related Persons cannot, in addition to what is already provided for in the CVM Instruction n ° 358/02, trade securities issued by Vale and publicly quoted companies controlled by it: i. Thirty (30) days prior and two (2) days after the dissemination or publication of the quarterly and annual financial Statements of Vale; ii. In the period between the decision taken by the shareholders of Valepar S.A., controller of Vale, to: (i) modify Vale capital by means of share subscription; (ii) approve a program of acquisition or disposal of Vale shares issued by Vale itself; and (iii) distribute dividends or interest on equity, bonuses in shares or their derivatives, or splits, and the publication of the respective public notices and/or advertisements or newsletters; and iii. During any other period designated by the Executive Director responsible for Vale investor relations, with the prior authorization by the Chairman of the Board of Directors at the request of the CEO. Related Persons may trade securities issued by Vale, as long as they observe the blackout periods mentioned above, with the goal of long-term investment, it being recommended they maintain ownership of securities issued by the Company for a minimum period of six (6) months.
Locations where the policy may be consulted	Vale s Trading Policy may be consulted at the Company s headquarters, in the Company s website (www.vale.com.br), in the Investors section (http://www.vale.com/brasil/PT/investors/company/corporate-governance/policies/Paginas/default.aspx), in the IPE Module of the Sistema Empresas.Net in the website of the Brazilian Securities and Exchange Commission, CVM (Portuguese acronym) (www.cvm.gov.br), on the BM&FBOVESPA S.A. s website Securities, Commodities and Futures Exchange of the São Paulo Stock Exchange (BM&FBOVESPA)(www.bvmf.com.br), and in the Stock Exchange of Hong King Limited (www.hkex.com.hk).

Table of Contents

20.2 - Other relevant information

The provisions of Vale s Trading Policy are also applied when the trading by Related Persons is carried out for their own direct and/or indirect benefit using, for example:

- A partnership directly or indirectly controlled by Related Persons;

- Third parties who have a management agreement, trust or financial asset investment portfolio management agreement with Related Persons;

- Proxies or agents of Related Persons; and

- Spouses who are not legally separated, partners and any other dependent included in the annual tax return of Related Persons.

Related Persons must guarantee, whenever possible and if they are forbidden from trading, that the above-mentioned natural and legal persons will also refrain themselves from trading securities issued by the Company.

Besides the Related Persons, the Company s Trading Policy also applies to any director who leaves the Company before the public disclosure of business or event initiated during his administration, and will extend for six months thereafter.

The restrictions contained above shall not apply to transactions made by investment funds where the Related Persons are shareholders provided that the (a) investment funds are not exclusive, and (b) trading decisions of the administrator of the fund may not be influenced by the shareholders.

Members of the Board, its advisory committees, the Executive Board and the Supervisory Board of Vale must communicate in writing pursuant to Article 11 of CVM Instruction 358/02, to the Executive Director of Investor Relations and through him to the CVM and the stock exchanges where Vale shares are listed for trading (a) the amount of securities issued by Vale and subsidiaries or their parent-held companies, as well as the property of his spouse, unless it is actually or legally separated, of a partner, any dependent included in the annual income tax and partnerships directly or indirectly controlled by them, and (b) changes in the above-mentioned positions.

The announcement referred to in the above paragraph above shall be made (a) on the first business day after taking office, and (b) within 5 (five) days after each trade and shall contain at least the following information (i) name and identification of the sender, indicating the registration number in the National Registry of Legal Entities or the Roll of Individual Taxpayers if they are domiciled for tax purposes in Brazil, (ii) quantity of each type and class, in case of shares, and the other characteristics for other securities, as well as the identification of the issuer and the balance of the position held before and after the negotiation, and (iii) form, price and date of the transactions.

The Executive Director of Investor Relations, in turn, shall submit to the CVM and the stock exchanges the information received from the managers, on an individual and consolidated basis, as the case may be, within 10 (ten) days after the end of the month when the changes to the positions held take place, or on the month when the taking of office takes place. Additional CVM Instruction # 568, from September 17, 2015, amended CVM Instruction # 358/02,

Table of Contents

establishing that said Executive Director should also send to said agencies and entities information relative to the trading of Vale-issued securities by the Company, and its controlled and sister companies.

The Related Persons must sign their Declaration of Compliance, pursuant to article 16, § 1 of the CVM Instruction 358/02, in accordance with the model contained as an annex to the Company s Trading Policy, which will remain filed at Vale s headquarters while they continue their relationship with Vale, and at least for five years after their departure.

21.1 - Description of the rules, bylaws, or internal procedures regarding the disclosure of information

On May 24, 2012, the Board of Directors of Vale approved the amendment of its Policy on Disclosure of Relevant Event or Fact (Disclosure Policy). This Disclosure Policy governs the disclosure of information, which by its nature may generate Relevant Events or Facts and is based on the following basic principles: (i) transparency, balanced information, fair treatment, and respect for the rights of investors; (ii) adherence to the best global practices in investor relations; and (iii) obedience to specific legislation of Brazil, the United States, France, and Hong Kong; to the regulations of the Brazilian *Comissão de Valores Mobiliários* [Securities and Exchange Commission] (CVM), the U.S. Securities and Exchange Commission (SEC) of the United States of America, the *Autorité des Marchés Financiers* (AMF) of France, and the *Securities and Futures Commission* (SFC) of Hong Kong, hereinafter referred to as regulatory agencies , and to the rules of the stock exchanges where the securities issued by Vale are listed and traded.

The Disclosure Policy applies to the controlling shareholder, to members of the Board of Directors, Audit Committee, and Advisory Committees, to the Executive Officers and executives of Vale, to the administrators of its controlled companies, and to any person who, by virtue of his office, function, or position in Vale and/or its controlled companies, has knowledge of information regarding a Relevant Event or Fact about Vale.

Open capital companies under Vale control should adopt this Disclosure Policy, with adjustments that might be required by local legislation and regulation applicable to such companies and markets where the respective securities are traded.

In addition, Vale has an Information Disclosure Board, chaired by the Chief Executive Officer of Vale which is comprised of the following members: Executive Director of Finances and Investor Relations (DRI); the General Consul, Director of the Investor Relations Department, and the Director General of the Controller. The main functions of the Information Disclosure Board are: (i) to verify the existence of a Relevant Event or Fact to be disclosed and to ensure its full, simultaneous, broad and immediate general disclosure, especially in markets trading securities issued by Vale; (ii)to supervise and approve communication to general capital markets of a Relevant Event or Fact, as well as evaluate the need of eventual correction or revision; (iii) to give an opinion as to the possibility of delaying the disclosure of a Relevant Event or Fact, if its immediate disclosure puts a legitimate interest of Vale at risk; (iv) to oversee the developments or changes in the business of Vale or its controlled companies to determine if there is need for disclosure of a Relevant Event or Fact; and, (v) to analyze possible rumors and speculation in the market about Vale to evaluate the need to publish a response and/or a Statement.

Any Related Person who is aware of information related to Relevant Act or Fact shall promptly notify the Finance and Investors Relations Director and/or the Investors Relations Director.

732

Table of Contents

21.2 Description of the disclosure policy for relevant events or facts, indicating the communication channel or channels used to disclose information on relevant facts or events and procedures for maintaining confidentiality of relevant information not disclosed and where the policy can be consulted.

In accordance with the Disclosure Policy, Vale will make public information of a strategic, administrative, technical, business, financial, and/or economic nature that might affect prices of its securities and/or influence decisions by investors to hold them, buy them, sell them, or exercise any rights inherent in the position of holders of securities (Relevant Event or Fact) according to applicable legislation and regulation.

The shareholders controlling Vale, the members of the Board of Directors, the Audit Committee, and the Advisory Committees, the Executive Officers and executives of Vale shall report any information regarding a Relevant Event or Fact of which they have knowledge to the Investor Relations Officer (DRI), who will make arrangements for its prompt disclosure.

All relevant information that is not yet public knowledge and is disclosed, intentionally or not, to analysts, investors, journalists or any person who is not (i) member of Vale s Board of Directors, Supervisory Board or Executive Committees; (ii) member of the Executive Board; or (ii) employee of Vale and its subsidiaries directly engaged with the matter, should be immediately made public according to applicable rules and regulations.

The disclosure of a relevant event or fact should be made before the opening or after the close of the trading sessions of the stock exchanges where the securities issued by Vale are traded. If disclosure is imperative during a trading session, the Executive Director for Finances and Investor Relations (DRI) shall request the relevant regulatory agencies and the stock exchanges, where the securities issued by Vale are listed and traded, to suspend trading until adequate disclosure occurs.

Access to information about Relevant Events or Facts, before their public disclosure, is limited to professionals directly involved with the matter under consideration. These professionals shall store this information in an adequate manner, maintain its confidentiality until its public disclosure, and insure that their subordinates and service providers subject to obligations of confidentiality do so, as well, and assume joint responsibility with them if this is not complied with. The professionals referred to are, in addition, subject to the agreement of confidentiality maintained with Vale.

Events or facts may, exceptionally, not be disclosed if the controlling shareholders and/or the directors of Vale view that disclosure endangers legitimate company interests. In this case, the administrators can submit to the CVM their decision to keep material facts or events confidential, on an exception basis, because the company understands they present a risk, if disclosed, to the legitimate interests of the organization.

All rumors and/or speculation in the market about Vale and/or its controlled companies, which have as their topic possible Relevant Events or Facts, shall be reported to the Information Disclosure Board. If some information about a Relevant Event or Fact escapes control or if there is an abnormal oscillation of the quote, price, or volume traded of securities, the DRI shall disclose that information publicly and immediately.

Also, under pertinent laws and regulations of the regulatory agencies and the stock exchanges, where the shares issued by Vale are listed and traded, Vale will make simultaneous disclosures of information to the capital market using the following communication channels:

Table of Contents

- Publication of Relevant Events or Facts in newspapers of general circulation habitually used by Vale, and such documents are to be sent, using the CVM s system to send periodical and eventual information (IPE System), and availability on the page Investors Relations on the Company website (www.vale.com).

- Circulation of press releases, simultaneously in Portuguese, English, and Chinese, shall be immediately filed, following the specific rules of the regulatory agencies and stock exchanges, where the shares issued by Vale are listed and traded (as well as posted in the web sites of the regulatory agencies and/or stock exchanges), with custodial agents, escrow agents for *American Depositary Receipts* (ADRs) and *Hong Kong Depositary Receipts* (HDRs), capital market participants, and news agencies;

- Telephone conferences and webcasts held regularly every quarter for the disclosure of results, or in exceptional cases, if that becomes necessary. The realization of these events will be announced in advance, publicly, to capital markets, indicating the date, time, and telephone numbers for connection. Such conferences and webcasts will be recorded and available on the Vale s website (www.vale.com) in the Investor Relations section, for ninety (90) days following the event;

- Public meetings at the discretion of the administration of Vale. Vale will publicly announce in advance the date, time, and place of such events;

- Intensive use of Vale s website s Investor Relations section, with versions in Portuguese, English, and Chinese, for the immediate availability of press releases, presentations made at meetings and conferences, operational information on corporate events, payments of shareholder compensation, issuance of debt securities, annual reports, quarterly and annual financial Statements, documents filed with regulatory agencies and stock exchanges, where the shares issued by Vale are listed and traded, quotes for Vale stock and Depositary Receipts, and answers to frequently asked questions compiled by participants in the capital market; and,

- Active participation in investor conferences held in Brazil and abroad.

Vale s Disclosure Policy may be consulted at the Company s headquarters, in the Company s website (www.vale.com.br), in the Investors section (http://www.vale.com/brasil/PT/investors/company/corporate-governance/policies/Paginas/default.aspx), in the IPE Module of the Sistema Empresas.Net in the website of the Brazilian Securities and Exchange Commission, CVM (Portuguese acronym) (www.cvm.gov.br), on the BM&FBOVESPA S.A. s website Securities, Commodities and Futures Exchange of the São Paulo Stock Exchange (BM&FBOVESPA)(www.bvmf.com.br), and in the Stock Exchange of Hong King Limited (www.hkex.com.hk).

734

Table of Contents

21.3 - Administrators responsible for implementation, maintenance, evaluation, and supervision of the information disclosure policy

The Executive Director for Investor Relations is the one responsible for the disclosure of information regarding relevant events or facts, although the other Associated Persons (controlling shareholder, members of the Board of Directors, of the Advisory Board and of advisory committees, Executive Officers, Vale officers, managers of its controlled companies and anyone who, due to their job, role or position in Vale and/or its controlled companies, may have knowledge of information relative to any Act or Fact Relevant about Vale), respond jointly in cases of non-compliance with the rules on disclosure.

Table of Contents

21.4 - Other relevant information

The Information Disclosure Board may, occasionally, approve the disclosure of forecasts for the behavior of the markets where the Company operates, presenting with clarity, the assumptions that support such estimates, together with the following note:

This communication may contain Statements that express Vale s expectations about future events or results. All Statements, when based on future expectations rather than on historical facts, involve various risks and uncertainties. Vale cannot guarantee that such Statements will prove correct. Such risks and uncertainties include factors relating to: (a) countries where we have operations, principally Brazil and Canada; (b) the world economy; (c) capital markets; (d) the price of minerals and metals and their dependence on global industrial production, which is cyclical by nature; and (e) the degree of global competition in the markets in which Vale operates. For additional information about factors that could cause results to differ from those estimated by Vale, please consult the reports filed with the Brazilian Securities and Exchange Commission (CVM), the French Autorité des Marchés Financiers *(AMF), the U.S. Securities and Exchange Commission (SEC), at the Stock Exchange of Hong Kong Limited, and, in particular, the factors discussed in the sections Estimates and projections and Risk factors in the Annual Report - Form 20F of Vale.*

Table of Contents

Signatures

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

Vale S.A.
(Registrant)

Date: June 03, 2016 By: /s/ Rogerio Nogueira
Director of Investor Relations