Advanced Emissions Solutions, Inc.
Form ARS
April 29, 2016

United States
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K

x ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the fiscal year ended December 31, 2015
or
¨ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
Commission File Number: 000-54992

Advanced Emissions Solutions, Inc.
(Name of registrant as specified in its charter)

Delaware	27-5472457
(State of incorporation)	(IRS Employer Identification No.)

9135 South Ridgeline Boulevard, Suite 200, Highlands Ranch CO, 80129
(Address of principal executive offices) (Zip Code)
(Registrant’s telephone number, including area code): (720) 598-3500
Securities registered under Section 12(b) of the Act:

Title of each class	Name of each exchange on which registered
Common Stock, $0.001 par value	None

Securities registered under Section 12(g) of the Act: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. ¨ Yes x No
Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Act. ¨ Yes x No
Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. x Yes ¨ No
Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). ¨ Yes x No
Indicate by check mark if disclosure of delinquent filers in response to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant’s knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ¨
Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer or a smaller reporting company. See definition of “large accelerated filer,” “accelerated filer” and “smaller reporting company” in Rule 12b-2 of the Exchange Act.

Large accelerated filer	¨	Accelerated filer	x
Non-accelerated filer	¨	Smaller Reporting Company	¨

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act.) ¨ Yes x No

The aggregate market value of the voting stock held by non-affiliates of the registrant was approximately $207,838,774 based on the last reported bid price of the Common Stock on the OTC Pink Tier on June 30, 2015. The number of shares outstanding of the registrant's Common Stock as of April 14, 2016 was 22,011,494.

Indicate the number of shares outstanding of each of the registrant's classes of common stock, as of the latest practicable date.

Class	April 14, 2016
Common Stock, $0.001 value	22,011,494

Documents Incorporated By Reference

Portions of the Proxy Statement for the 2016 Annual Meeting of Stockholders of Advanced Emissions Solutions, Inc. to be filed subsequently with the Securities Exchange Commission are incorporated by reference into Part III of this report.

ADVANCED EMISSIONS SOLUTIONS, INC.
ANNUAL REPORT ON FORM 10-K
FOR THE FISCAL YEAR ENDED DECEMBER 31, 2015

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PART I
Item 1. Business
Reorganization
ADA-ES, Inc. (“ADA”), a Colorado corporation, was incorporated in 1997. Pursuant to an Agreement and Plan of Merger ("Reorganization"), effective July 1, 2013, Advanced Emissions Solutions, Inc. (“ADES”), a Delaware company incorporated in 2011, replaced ADA as the publicly-held corporation and ADA became a wholly-owned subsidiary of ADES. Each outstanding share of ADA’s common stock automatically converted into one share of common stock of ADES and the shareholders of ADA became stockholders of ADES on a one-for-one basis, holding the same number of shares in and the same ownership percentage of ADES after the reorganization as they held in and of ADA prior to the reorganization. ADES’s Second Amended and Restated Certificate of Incorporation authorizes the issuance of 100,000,000 shares of common stock, par value per share of $0.001 and 50,000,000 shares of preferred stock, par value per share of $0.001. ADES’s common stock became listed on the NASDAQ Capital Market under “ADES”, ADA’s previous symbol, and ADA’s stock ceased trading on the NASDAQ Capital Market on July 1, 2013. Since the Company was not able to timely file complete financial statements with the Securities and Exchange Commission, ADES's common stock was delisted from the NASDAQ Capital Market on March 30, 2015 and began trading on the OTC Pink® Marketplace - Limited Information Tier under the trading symbol "ADES". For further information on the reorganization, see Note 20 of the Consolidated Financial Statements of this Annual Report on Form 10-K. Hereinafter, this Annual Report on Form 10-K will be referred to as the "Form 10-K".

As this filing pertains to the year ended December 31, 2015, the terms the “Company”, “we”, “us” and “our” means ADA and its consolidated subsidiaries for the periods through and including the period ended June 30, 2013 and ADES and its consolidated subsidiaries for the dates or periods after July 1, 2013. As of December 31, 2015 ADES's wholly-owned subsidiaries included:

- ADA
- BCSI, LLC ("BCSI")
- Advanced Clean Energy Solutions, LLC ("ACES")
- ADEquity, LLC ("ADEquity")
- ADA Environmental Solutions, LLC (“ADA LLC”)
- ADA Intellectual Property, LLC (“ADA IP”)
- ADA-RCM6, LLC (“ADA-RCM6”)
- ADA Analytics, LLC
- ADA Analytics Israel Ltd. (collectively with ADA Analytics, LLC, "ADA Analytics")

None of ACES, ADEquity, ADA IP or ADA-RCM6 had operations prior to 2014. ADA LLC ceased operations in 2012 and ADA IP has had no operations.

In August 2015, the Company’s management approved an action to wind down the operations of ADA Analytics. The Company intends to address the immediate United States analytics market using alternative services and capabilities. Refer to Note 8 of our Consolidated Financial Statements in Item 8 of this Form 10-K.

ADES and its subsidiaries have continued to conduct business in substantially the same manner as conducted prior to the reorganization.

Additionally, we are an investor in Clean Coal Solutions, LLC (“CCS”), Clean Coal Solutions Services, LLC ("CCSS") and RCM6, LLC ("RCM6"), whose performances significantly impact our financial position and results of operations as these investments are accounted for under the equity method of accounting. As of December 31, 2015, we held equity interests of 42.50%, 50.00%, and 24.95% in CCS, CCSS, and RCM6, respectively. During March 2016, the Company sold its entire equity interest in RCM6. For the year ended December 31, 2015, CCS and RCM6 met the significant subsidiary test provided in Regulations S-X Rule 1-02 (w) and their financial statements are included in Item 15 in this Form 10-K filing. CCSS did not meet the significant subsidiary test provided in Regulations S-X Rule 1-02 (w) in that the Company's equity earnings for the year ended December 31, 2015 or the year ended December 31, 2013 did not exceed 20% of the Company's consolidated income from continuing operations before income taxes. However, CCSS did meet the significant subsidiary test for the year ended December 31, 2014 and therefore additional information related to CCSS pursuant to Regulation S-X Rule 3-09 is included within Item 15 of this Form 10-K.

Business Purpose and Strategy

ADES serves as the holding entity for a family of companies that provide emissions solutions to customers in the coal-fired power generation, industrial boiler and cement industries. Through its subsidiaries and joint ventures, the Company is a leader in emissions control technologies and associated equipment, chemicals, and services. Our proprietary environmental technologies enable our customers to reduce emissions of mercury and other pollutants, maximize utilization levels and improve operating efficiencies to meet the challenges of existing and pending emission control regulations.

Our major activities include:

- Development and sale of technology to reduce emissions and improve operations of coal-fired boilers used for power generation and industrial processes;
- Development and sale of equipment, consulting services, specialty chemicals and other products designed to reduce emissions of mercury, acid gases, metals and other pollutants and the providing of technology services in support of our customers' emissions compliance strategies;
- Research and development of technologies and other solutions to advance cleaner energy and to help our customers meet existing and future regulatory and business challenges, including Carbon Dioxide (“CO_2”) emissions control technologies and technologies designed to reduce other emissions related to power generation or industrial processes;
- Through CCS, an unconsolidated entity, reduction of mercury and nitrogen oxide ("NO_X") emissions at select coal-fired power generators, through the burning of Refined Coal ("RC") produced by RC facilities placed in service by CCS. Additionally, we benefit from the tax credits generated by the production of RC by retaining the credits or selling or leasing the pertinent RC facilities to tax equity investors. See the separately filed financial statements of CCS and the other related RC entities within Item 15 of this Form 10-K.

Operating Locations

During the year ended December 31, 2015, the Company had domestic and international operations where personnel are based. The domestic operations are located in Colorado and Pennsylvania. The Pennsylvania location was closed at the end of 2015, with certain wind-down activities remaining through early 2016. The international operations were not material to the Company's total revenues or long-lived assets and were closed at the end of 2015. CCS and the related operating entity CCSS have operations within ten states across the United States.

Markets for Our Products and Services

We provide environmental control equipment, chemicals and technologies to our primary market that consists of approximately 850 coal-fired electrical generation units and approximately 600 coal-fired boilers that produce steam for industrial processes and heating.

The share of coal-fired power generation as a percentage of U.S. electricity generation is expected to continue to decrease over the coming years due to low projected natural gas prices, increasingly stringent environmental regulations, and increased deployment of renewable power generating assets. However, we believe that coal-fired power generation will remain a significant component of the U.S. power generation mix for many years given its abundance, affordability, reliability and availability as a domestic fuel source. The Energy Information Administration ("EIA") projects that coal will provide 26% of electricity generation in 2040. The primary drivers for many of our products and services are environmental laws and regulations impacting the electric power generation industry and other coal users. These regulations include the Mercury and Air Toxics Standards (“MATS”), a federal regulation that requires all of the existing fleet and all new coal-fired plants to control mercury emissions, acid gases, and particulate matter, the Maximum-Achievable Control Technology (“MACT”) standards for industrial boilers (“IBMACT”) and the cement industry, as well as various state regulations and permitting requirements for coal-fired power plants. In addition to the federal MATS rule, certain states have their own mercury rules that are similar to, or more stringent than MATS, and many plants around the country have agreed to consent decrees which require pollution controls that in some cases are more restrictive than the existing regulations. We continue to believe the MATS and MACT rules, as well as certain state regulations, create a large market for refined coal and emission control products. Additionally, the proposed, pending, and future rules relating to CO_2 emissions, effluent discharge, coal combustion residuals, and other pollutants are driving and we expect will continue to drive future markets for which we may develop products and solutions.

In general, coal is low cost, stable, and a reliable source of domestic energy that, unlike many other forms of energy, can be easily stored in large quantities. We believe coal is critical to ensuring the U.S. has a secure and stable source of energy. With

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current environmental regulations, we believe it is unlikely that any new coal plants will be financed or constructed, which suggests that the average plant age in 2040 will be 66 years old. With the continued retirement of the less efficient and generally smaller coal plants switching to other fuels, and the influx of intermittent generation such as solar and wind, we believe coal-fired generation will come to be seen as a complement to the other fuel sources to provide base-load electricity to users and to support the electric grid. This belief is reflected in the Clean Power Plan recently published by the U.S. Environmental Protection Agency ("EPA"), which has been stayed by the United States Supreme Court. This dynamic will likely push coal-fired generators to increase their focus on maintaining regulatory compliance in the most efficient and cost effective manner, while also responding to intermittent generating sources. As coal plants age and they are dispatched with more variability rather than at base-load levels as they were designed, we expect that increased support will be required to assure reliable operation and continued compliance with environmental regulations. We expect that plants and owners will require additional support as their aging workforce retires and on-site expertise is no longer as available as utilities allocate resources elsewhere in their power generation fleets.

While the future is uncertain, we expect this will continue to drive a shift in utilities' purchasing desires towards variable cost products and integrated solutions with low capital expenditure requirements and away from large capital equipment and other fixed cost solutions that are less likely to have costs recovered given the uncertain operating life of many coal plants. We also expect to see a continued trend towards outsourcing various aspects of plant operations to third party vendors and away from having integrated plant staff.

We believe it is likely that many companies that are in the U.S. coal-related businesses, such as coal mines, coal-fired power generators and coal-centric large equipment providers will struggle to adapt to the changes expected in the coming years. However, we see opportunities for companies that can offer their customers creative and cost effective solutions that help the U.S. coal-related businesses meet regulatory compliance, improve efficiency, lower costs and maintain reliability.
As of December 31, 2015 our products, services and RC technology licenses available to coal-fired electrical generators requiring solutions to assist with compliance with emissions standards, included:

- Equipment:
Low capital expenditure (“CAPEX”) mercury control technologies and systems such as Activated Carbon Injection (“ACI”) systems, that effectively reduce mercury emissions over a broad range of plant configurations and coal types; and
Dry Sorbent Injection systems (“DSI”) to reduce emissions of Sulfur Dioxide ("SO_2") and other acid gases such as Sulfur Trioxide ("SO_3") and Hydrogen Chloride ("HCl").
ADAir-Mixer™ in-duct technology alters flue gas flow to improve mixing and optimize particle dispersion to reduce sorbent consumption for DSI and ACI systems; and
ProRak™ mercury process analyzer provides real-time mercury emissions measurements that incorporate market leading continuous emissions monitoring systems ("CEMS").

- RC technology licenses:
Our patented CyClean™ technology, a pre-combustion coal treatment process that provides electric power generators the ability to enhance combustion and reduce emissions of NO_X and mercury from coals burned in cyclone boilers; and
Our patented M-45™ and M-45-PC™ technologies, which are proprietary pre-combustion coal treatment technologies for circulating fluidized bed boilers and pulverized coal boilers, respectively.

- Chemicals and other:
Our M-Prove™ technology, which is also incorporated in our RC technologies, provides a cost effective alternative to other halogen-based, oxidation chemicals used to enhance removal of mercury emissions. M-Prove™ technology mitigates coal treatment corrosion risks to minimize maintenance and repair costs to enhance system reliability; and

Our RESPond™ liquid chemical additive is a highly effective ash resistivity modifier for power plants operating cold-side electrostatic precipitators. Unlike SO_3 solutions, the incumbent chemical being used to modify ash resistivity, the RESPond™ additive does not interfere with or reduce the effectiveness of activated carbon injected into the flue gas for purposes of reducing mercury emissions.

- Consulting services:

We provide general consulting services as requested by our customers related to emissions control.
We provide our ADA® Health Check services to review the operational performance and efficiencies of our customers' emissions control systems and provide recommendations for improvements; and
We provide CEMS Reliability Program services that provide expert evaluation of customers CEMS systems and remediation of any identified operating issues.

- Analytic services:

Predictive Emissions Monitoring ("PEMS") is a virtual mercury process monitor that provides continuous monitoring of mercury levels in flue gas without the need for dedicated mercury ("Hg") process hardware and technical resources.
Additionally, as of December 31, 2011, CCS, an unconsolidated entity in which we own a 42.5% equity interest, had built and placed into service a total of 28 RC facilities designed to produce RC at coal-fired power plants. Coal-fired power plants use RC as one of a portfolio of tools to help comply with MATS and other environmental regulations. These RC facilities produce RC that qualifies for tax credits under Section 45 of the Internal Revenue Code ("IRC") ("IRC Section 45"), including meeting the "placed in service" requirements (hereafter referred to as "placed in service"). The law that provides for IRC Section 45 tax credits substantially expires in December 2019 for two of CCS's RC facilities placed in service in 2009 and in December 2021 for 26 RC facilities built and placed in service in 2011. Once an RC facility is in operation, CCS may enter into contracts with tax equity investors to lease or sell the RC facility, which we refer to as an "invested" RC facility. RC facilities that are producing RC but CCS has not leased or sold are referred to as "retained" RC facilities where by the tax benefits may be realized by the owners of CCS. As of December 31, 2015, 14 RC facilities were producing RC at utility sites with 12 invested and two retained. During the fourth quarter of 2015, CCS ceased full-time operation of three retained facilities while it awaits final commitments for the purchase or lease of such facilities by tax equity investors. The remaining 14 RC facilities, although placed in service, were either installed but not operating, awaiting site selection or in various other stages of contract negotiation, permanent installation or beginning full-time operations. A current tax equity investor has notified CCS that it will terminate the investment effective in April 2016 and CCS will seek a new tax equity investor for that RC facility. Of the remaining 14 RC facilities, eight have been permanently installed, including the three RC facilities for which operations were suspended during the fourth quarter of 2015, and are ready to operate pending final commitments for the purchase or lease of such facilities by tax equity investors. The remaining facilities are awaiting site selection or in various other stages of contract negotiation, permanent installation or commissioning. Some of the remaining RC facilities are expected to produce RC in 2016. One of the invested facilities is owned by RCM6, of which the Company owned 24.95% at December 31, 2015 but sold during the first quarter of 2016. Additionally, in March 2016, CCS entered into an agreement to lease one of its remaining RC facilities to a third-party.

Although we intend to utilize the tax credits generated by producing RC, it is also financially advantageous to lease or sell the RC facilities to tax equity investors. The tax equity investor for a particular RC facility pays the operating expenses of the RC facility and also pays CCS either an installment purchase price or lease rental fee, and in return accrues significant tax benefits, including IRC Section 45 tax credits. The Company benefits from equity income and distributions accruing through its investment in CCS. Tax equity investors, including the Company, may benefit from their investment through the realization of tax assets and credits from the production of RC. As of December 31, 2015 and 2014, respectively, the tax credits received under IRC Section 45 were $6.71 and $6.60 per ton of coal produced. The value of the IRC Section 45 tax credits are adjusted annually based on inflation adjustment factors published in the Federal Register. As of December 31, 2015, we have received substantial tax credits and benefits from RC facilities operated for the benefit of CCS but have not yet been able to utilize tax benefits and credits from the production of RC due to our Net Operating Losses ("NOL"). See Note 16 to our Consolidated Financial Statements for additional information regarding our deferred taxes.
The 14 RC facilities producing RC as of December 31, 2015 are operated by our 50% owned entity, CCSS under operating and maintenance agreements with the owners or lessees of the RC facilities.
Legislation and Environmental Regulations

Federal Mercury and Air Toxic Standards ("MATS")

On December 16, 2011, the EPA issued the final MATS rule, which took effect on April 16, 2012. In light of legal challenges to the final rules, the EPA voluntarily stayed the effectiveness of the MATS rule on July 20, 2012 pending further reconsideration of the air pollution limits for new power plants until March 28, 2013 when the EPA finalized the MATS rule. The EPA structured the MATS rule as a MACT-based hazardous pollutant regulation applicable to coal and oil-fired Electric Utility Steam Generating Units ("EGU"), that generate electricity via steam turbines, which provides for, among other provisions,

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control of mercury and particulate matter, and control of acid gases such as HCl and other Hazardous Air Pollutants (“HAPs”). The EPA issued a final rule for new source standards on March 28, 2013. The MACT standards are also known as National Emission Standards for Hazardous Air Pollutants ("NESHAP").

The MATS rule for existing HAP sources establishes standards for certain HAPs emitted by coal and oil fired EGUs with a capacity of 25 megawatts or greater. According to our estimates the standard sets a limit that we believe requires the capture of up to 80-90% of the mercury in the coal burned in electric power generation boilers as measured at the exhaust stack outlet for most plants.

Unless an extension was obtained, existing HAP sources were required to comply with the MATS standards by April 2015. An authorized state permitting authority has the ability to grant HAP sources up to a one year extension, on a case by case basis, if such additional time is necessary for the installation of controls. HAP sources may also request an additional year extension by obtaining an Administrative Order ("AO") from EPA. According to our estimates based on conversations with plant operators and industry estimates, we believe that MATS compliance extensions were granted for more than 400 boilers. Some of these plants have announced retirement or are switching fuel from coal to natural gas, as described above, but we believe an opportunity to license our technologies and sell our products and services remains at a significant number of coal-fired boilers. Based on EPA compliance data available in 2015, approximately 262 affected units were reporting Hg emissions, as required without an extension. We are aware of AO extensions having been granted to units. We expect that all other units still in operation after April 2016 will be required to comply with MATS emission limits and will have implemented necessary technologies to comply with the environmental regulations.

On November 25, 2014, the Supreme Court agreed to review a decision by the U.S. Court of Appeals for the District of Columbia Circuit ("DC Circuit") on April 15, 2014 to uphold MATS in a lawsuit brought by the Utility Air Regulatory Group, the National Mining Association and a group of 21 states. The Supreme Court considered whether the EPA unreasonably refused to consider costs in determining whether regulation of HAPs emitted by electric utilities is appropriate. The Supreme Court heard arguments in March 2015. On June 29, 2015, the Supreme Court ruled that the EPA must reconsider the MATS rules as it did not properly take into account the costs of the regulations before deciding to adopt them as an "appropriate and necessary" regulation of EGUs. The decision remanded the case back to the D.C. Circuit. On November 20, 2015, the EPA proposed a supplemental finding that consideration of cost does not alter the agency’s previous conclusion that it is appropriate and necessary to regulate coal- and oil-fired EGUs under section 112 of the Clean Air Act ("CAA"). On December 1, 2015, the EPA submitted the proposed supplemental finding for public comment. The proposed supplemental finding does not affect power plants’ compliance obligations or the steps that many plants have taken and continue to make to meet those obligations by installing controls and technologies to reduce toxic air emissions. On December 15, 2015 the D.C. Circuit issued a unanimous order rejecting a motion by multiple utilities and states seeking to halt the MATS program while the EPA completes its cost analysis, which is expected in April 2016. On February 23, 2016, twenty states petitioned the Supreme Court to stay MATS during this period, but the petition was denied on March 3, 2016, and MATS remains in effect.

State Mercury and Air Toxics Regulations Affecting EGUs

In addition to federal MATS rules, certain states have their own mercury rules that are similar to, or more stringent than, MATS, and power plants around the country are subject to consent decrees that require the control of acid gases and particulate matter, in addition to mercury emissions. Seventeen states have mercury-specific rules that affect more than 260 generating units.

Industrial Boilers MACT

In January 2013, the EPA issued the final set of adjustments to the MACT-based air toxics standards originally finalized in March 2011 for industrial boilers, including mercury, particulate matter, and acid gas emission limits. Existing boilers must comply by January 31, 2016. Non-major source boilers (area sources) and major source boilers that began operations on or after June 4, 2010 were required to be compliant by March 21, 2014 and January 31, 2013, respectively. An authorized state permitting authority has the ability to grant sources up to a one-year extension, on a case by case basis, if such additional time is necessary for the installation of controls.

The EPA estimates that approximately 600 coal-fired boilers will be affected by the industrial boiler MACT (“IBMACT”), in industries such as pulp and paper.

On December 1, 2014, the EPA announced the reconsideration of the IBMACT and proposed amendments to the version published January 31, 2013, representing technical corrections and clarifications. The proposed amendments do not affect the applicability of the final rule.

Cement MACT
In addition to issuing standards covering electric power generators, the EPA has developed a MACT-based mercury emissions regulation for the Portland cement industry through amendments to the National Emission Standards for HAPs (the “Cement MACT”). The EPA published the final Cement MACT regulation on February 12, 2013 with compliance required by September 9, 2015.

An authorized state permitting authority has the ability to grant sources up to a one year extension, on a case by case basis, if such additional time is necessary for the installation of controls. The standards for new kilns apply to facilities where construction, modification, or reconstruction commenced after May 6, 2009. The Cement MACT requires, in part, cement plants to reduce 92% of mercury emissions and 83% of hydrocarbons emissions. The EPA estimated that the rule would affect 156 kilns operating as of 2013. In an analysis published in 2010, the EPA estimated that the industry average mercury emissions were 111 pounds per million tons of clinker, which is produced in the manufacture of Portland cement. The Cement MACT limits emissions to 55 pounds per million tons of clinker. The EPA identified activated carbon injection or wet scrubbers as options to meet mercury emission limits. Plants must also meet emissions limits of three parts per million for HCl. The EPA estimated that 120 existing kilns would require scrubbers to meet the proposed HCl standards and four could meet the standard using dry lime injection. The Company offers both ACI and DSI systems to help companies meet the regulation.
SO_2 and Particulate Matter
The EPA established National Ambient Air Quality Standards ("NAAQS") that have resulted in several rules including the Cross State Air Pollution Rule ("CSAPR"), which were designed to significantly improve air quality by reducing power plant emissions that contribute to ozone and/or fine particle pollution in other states.
On July 6, 2011, the EPA finalized CSAPR and on November 21, 2014, following several court actions, the EPA realigned compliance deadlines as required by the DC Circuit. Currently, CSAPR Phase 1 implementation is scheduled for 2015 and 2016, with Phase 2 beginning in 2017. Implementation is achieved through establishing state-specific emission budgets. 28 states have been identified under CSAPR to limit SO_2 and NO_x emissions either year-round or during the summer time. Based on published emission data and announced coal plant retirements or announcements to repower plants with natural gas, we believe that most affected states will meet 2017 emissions budgets without new controls.
On August 10, 2015, the EPA finalized the NAAQS Data Requirements rule (“DDR”) that addresses the need for additional air quality data in areas that do not have sufficient monitoring required to allow the EPA to carry out the 2010 revised SO_2 NAAQS (“2010 1-hour SO_2 NAAQS”). The DDR directs states and tribal air agencies to characterize current air quality in areas with large SO_2 sources (2,000 tons per year or greater). The DDR requires air agencies to establish ambient monitoring sites or conduct air quality modeling, and submit air quality data to the EPA or, establish federally enforceable emission limit(s) and provide documentation of the limit(s) and compliance to the EPA by 2017. The EPA will use this information for future designations under the 2010 1-hour SO_2 NAAQS. Of the areas that had sufficient air quality monitoring in place from 2009-2011 to be tested against the 2010 1-hour SO_2 NAAQS, the EPA designated 29 areas in 16 states as Non-attainment Areas. Those states submitted State Implementation Plans ("SIP") by April 4, 2015 demonstrating how the areas will meet the 2010 1-hour SO_2 NAAQS by July 15, 2018 (5 years after the non-attainment designation). Per the agreement between the EPA and the Sierra Club and National Resources Defense Council, which was accepted as an enforceable order by the Northern District of California on March 2, 2015 to resolve litigation concerning the completion of designations, the EPA must complete designations for all remaining areas in the country in up to three additional rounds: the first, by July 2, 2016, the second by December 31, 2017, and the final round by December 31, 2020. On April 23, 2014, the EPA recognized in a memorandum regarding guidance for 1-hour SO_2 Non-attainment Area SIP Submissions that the emission control equipment used to comply with the EGU MATS and IB and Cement MACTS regulations will concurrently reduce SO_2 emissions. We expect that the SO_2 NAAQS will impact several plants in affected areas that have inadequate or nonexistent SO_2 controls installed. Some of these plants are expected to rely on DSI to meet control requirements.
In 1999, the EPA established the Regional Haze Rule ("RHR") to improve air quality in national parks and wilderness areas. States must meet requirements established in their specific Regional Haze Plan prior to 2018, with equipment typically installed by 2017, while meeting reasonable progress goals prior to that. In 2018 the state plans will be

reevaluated and revised as necessary to set new progress goals and strategies to meet the goals. NO_X, SO_2 and particulate matter all can contribute to regional haze. Some of these plants may use the Company's services to help meet the limits imposed by the rules.

Effluent Limitation Guidelines and Coal Combustion Residuals

On September 30, 2015, the EPA set the first federal limits on the levels of toxic metals in wastewater that can be discharged from power plants. The final rule requires, among other things, zero discharge for fly ash transport water, and limits on mercury, arsenic, selenium, and nitrate from flue gas desulfurization ("FGD") wastewater (also known as "legacy wastewater"). Plants must comply with limits for legacy wastewater by November 1, 2018 with a possible extension to December 31, 2023 with state approval. Although halogens are not directly regulated in the effluent guidelines, some halogens may impact the effectiveness of biological wastewater treatment systems such are often used for selenium. On December 19, 2014, the EPA issued a final rule that implemented a set of requirements for the safe disposal of coal combustion residuals ("CCRE") that included regulations of fly ash as a solid waste and not a hazardous waste. The final rule affects both existing and new CCRs, including lateral expansions of any existing unit with respect to reducing the risk of catastrophic failure, protecting groundwater, operating criteria, record keeping, inactive units, state programs, and closure. We expect that these regulations and restrictions on CCRs including fly ash and liquid effluents will generate a continuous market beginning in the 2017 through 2018 time-frame for technologies and operating approaches to reduce liquid effluents and stabilize the resulting concentrated mixtures using fly ash. The Company is evaluating whether to develop new products to help plants comply with these rules and how these rules may affect current product offerings.

Additional Legislation and Regulations

On December 15, 2009, the EPA issued an endangerment finding that triggered a Clean Air Act requirement that the agency regulate CO_2 emissions from stationary sources such as power plants. The DC Circuit upheld the finding on June 26, 2012. As required by the Clean Air Act, on June 2, 2014, the EPA proposed rules to reduce Greenhouse Gases (“GHG”) from existing sources in states and, on October 28, 2014, a supplemental plan for Indian Country and U.S. Territories. Industry members and states have filed an extensive consolidated litigation before the DC Circuit challenging numerous aspects of EPA’s proposed GHG rules. The court ruled on June 9, 2015, that since the EPA had not yet finalized its GHG rules under Section 111(d) of the Clean Air Act, the court could not review its legality. Subsequently, on August 3, 2015, the EPA finalized rules, in the form of the Clean Power Plan, establishing guidelines for states to follow in developing plans to reduce GHG emission from existing fossil fuel-fired EGUs. The Clean Power Plan has been challenged by multiple states in the DC Circuit. On February 9, 2016 the Supreme Court stayed the Clean Power Plan, which means it will not take effect until court review is complete. The DC Circuit has scheduled oral arguments for June 2, 2016.

Under the Plan, states are required to prepare State Implementation Plans to meet state targets established based on emission reductions from affected sources. The Plan requires that the Best System of Emission Reduction (“BSER”) is employed, and establish three building blocks that include heat rate improvements at the affected plant, substituting generation from less carbon-intensive EGUs, and substituting renewable generation. The EPA expressed in the plan that the combination qualifies as the “best” system that is “adequately demonstrated” and the combination will be required to meet the state emission limits. We believe that these regulations could create an opportunity for the Company to continue to develop technologies to address the long-term needs of our customers to reduce CO_2 emissions through technologies applied at affected sources and approaches to support plant operations within a more complex interconnected grid environment.

On March 27, 2012, the EPA proposed the first Clean Air Act standard for CO_2 emissions from new coal and natural-gas fired power plants as a result of two separate settlements with states and environmental groups in 2010. In response to comments received on the March 27, 2012 proposal, the EPA, on September 20, 2013, proposed revised standards regarding the same new source CO_2 emissions standards. On June 2, 2014, the EPA proposed CO_2 emission standards for modified and reconstructed power plants. On August 3, 2015, the EPA finalized the proposed rules for newly constructed, modified, and reconstructed power plants. These standards reflect the degree of emission limitation achievable through the application of the BSER that the EPA has determined has been adequately demonstrated for each type of unit.

Segment Information

Historically, the Company was organized into four reportable segments: (1) Refined Coal ("RC"); (2) Emissions Control - Engineering and Technology Services ("EC - ETS"); (3) Emissions Control - Manufacturing ("EC - Manufacturing"); and (4) Research and Development ("R&D"). During the fourth quarter of 2015, the Company reorganized its operations into two reportable segments. As a result, the EC - ETS, EC - Manufacturing and R&D segments were combined to form a new Emissions Control segment ("EC"). As of December 31, 2015, the Company's operations consist of two reportable segments: (1) RC and (2) EC.

Financial information related to each of the Company's reportable segments is set forth in the Consolidated Financial Statements filed as a part of this report in Note 17 and that information is incorporated by reference here.

(1) RC Segment

Our RC segment derives its earnings from equity method investments as well as royalty payment streams and other revenues related to reduced emissions of both NO_X and mercury from coals. Reduced emissions of both NO_X and mercury from the combustion of coal is necessary to comply with regulatory standards. The Company's equity method investments related to the RC segment include CCS, CCSS and RCM6. As of December 31, 2015, we held equity interests of 42.5%, 50%, and 24.95% in CCS, CCSS, and RCM6, respectively. In March 2016, we sold our entire interest in RCM6.

CCS owns, leases or sells facilities used in the production of RC. The RC facilities are located at coal-fired generation stations owned by regulated utilities, cooperatives, government agencies and wholesale power generators (collectively, "Generators"). The RC produced by the RC facilities is used by the Generators as fuel in the coal-fired boilers to produce electricity. The production of RC via these RC facilities qualifies for tax credits that are available under IRC Section 45 ("Production Tax Credits" or "PTCs"). The IRS has issued guidance regarding emissions reductions in the production of electricity by coal-fired power plants including measurement and certification criteria necessary to qualify for the IRC Section 45 PTCs. Under the Tax Relief and Job Creation Act of 2010, the deadline for placing qualifying RC facilities into service was extended from December 31, 2009 to December 31, 2011. CCS placed 28 RC facilities into service during the applicable time periods. The value of the IRC Section 45 PTC is adjusted annually based on inflation adjustment factors published in the Federal Register. As of December 31, 2015, the tax credit received under IRC Section 45 was $6.71 per ton of coal produced.

Those RC facilities that CCS has leased or sold to tax equity investors are referred to as invested facilities. CCS collects lease income from the lessee, if leased, or sales proceeds from the buyer if sold, of the invested RC facilities. The Company benefits from these transactions through its equity method investment in CCS. RC facilities that are producing RC but that CCS has not leased or sold are referred to as retained RC facilities. The owners of CCS, including the Company, may benefit to the extent PTCs and other tax benefits are realized from the operation of retained RC facilities. The ability to generate PTC's expires 10 years after each RC facility was placed into service but not later than December 31, 2021. RCM6 owned a single RC facility managed by an affiliate of CCS, of which the Company owned 24.95% as of December 31, 2015. In March, 2016, the Company sold its entire interest in RCM6.

CCSS operates and maintains RC facilities under operating and maintenance agreements. CCS or the owners or lessees of the RC facilities pay CCSS, subject to certain limitations, the costs of operating and maintaining the RC facilities plus various fees. CCSS also arranges for the purchase and delivery of certain chemical additives, which include the chemicals required for our CyClean™, M-Prove™, M-45™ and M-45-PC™ technologies, necessary for the production of RC under chemical agency agreements. The term of each chemical agency agreement runs concurrently with the respective RC facilities lease. CCSS is also the primary beneficiary of certain RC facilities that are VIEs and therefore consolidates such RC facilities. All net income (loss) associated with these consolidated RC facilities is allocated to the noncontrolling equity owners and therefore does not impact our equity earnings (loss) from CCSS.

CCS also pays us royalties from licensing our M-45™ and M-45-PC™ emission control technologies to CCS ("M-45 License"). Royalties are earned based upon (i) a percentage of the per-ton, pre-tax margin of RC produced with the M-45 License that produces a valid and verifiable Section 45 tax credit, net of certain allocable operating expenses, (ii) a percentage of the Section 45 tax credits claimed, and not invested by a licensee, sublicensee, or licensee affiliate using the M-45 License, net of certain allocable operating expenses and (iii) a percentage of the revenue, net of all direct expenses, received by CCS as a direct result of CCS's exercise of the M-45 License.

(2) EC Segment

(a) Systems & Equipment- Activated Carbon Injection, Dry Sorbent Injection System and Other Systems

The Company is an established market leader in the supply of ACI systems for the coal-fired electric industry. The injection of activated carbon into the coal combustion flue gas downstream for the purpose of absorbing mercury molecules is the most established and accepted technology to specifically reduce mercury emissions. The Company's proprietary and highly engineered ACI systems facilitate a customer's ability to reliably and cost effectively meet regulatory emissions limits.

Demand for ACI systems was strong into the first quarter of 2015 with the majority of coal-fired utility boilers required to comply with MATS by April 2015, although a number of units have been granted extensions for compliance until April 2016. In addition, we expect that some plants that were relying on native mercury capture due to coal characteristics and benefits from other air pollution control devices already installed such as wet scrubbers will require additional controls during certain operating periods which will result in a few additional sales of ACI systems. We also expect that some industrial boilers will require ACI to meet the IBMACT mercury compliance levels. Although the MATS compliance is required as of April 2015 or 2016, many coal-fired generators will likely modify their control processes to ensure the most effective and cost efficient compliance. As such, additional ACI opportunities may emerge over the coming years.

In 2015 the Company developed and is currently selling other environmental equipment systems; such as, ADAir-Mixer™ in-duct technology and ProRak™ mercury process analyzers.

Through December 31, 2015, the Company supplied DSI systems for the electric utility industry through its subsidiary BCSI. Upon the closure of its fabrication facility in McKeesport, PA, the Company began focusing its efforts within the DSI market on engineering and related services and plans to sell DSI systems that are manufactured through third parties, similar to our current structure within the ACI marketplace. DSI systems inject dry alkaline sorbents to control acid gases such as SO_3 and HCl. Our DSI technology is also used to control SO_2, one of six criteria air pollutants. The use of DSI for SO_3 reduction in conjunction with ACI has also been shown to enhance the capture of mercury from coal-fired boilers.

Demand for these systems continued in 2015 with the majority of coal-fired utility boilers required to comply with the MATS by April 2015 and a number of units granted extensions for compliance until April of 2016. DSI is used to control HCl to meet MATS and IBMACT HCl limits, to control SO_3 for improved ACI effectiveness for mercury control, and limited SO_2 control. DSI sales continued into 2015 to meet MATS and the IBMACT and, are expected to continue on a more limited basis into 2016 and 2017 for CSAPR and associated SO_2 NAAQS rule, and 2017 for the Regional Haze Rule.

(b) Consulting Services

We also offer consulting services to assist electric power generators, the electric utility industry and others in planning and implementing strategies to meet the new and increasing government emission standards requiring reductions in SO_2, SO_3, HCl, NO_X, particulates, acid gases and mercury. This includes demonstrations of our commercial products.

In 2015 the Company developed and is currently selling other consulting and analytic services such as ADA® Health Check and continuous and predictive emissions monitoring systems and solutions.

(c) Chemicals

(i) Mercury Control Additives

Our proprietary M-Prove™ pre-combustion coal treatment technology involves the application of proprietary chemicals to coal. This technology (formerly referred to as Enhanced Coal) substantially reduces mercury emissions and also can reduce the amount of activated carbon or other sorbents, or potentially eliminate the need to use sorbents, for mercury capture at certain coal-fired power plants. We have shown that the application of M-Prove™ technology to Western coals, such as Powder River Basin ("PRB") and lignite, can reduce emissions of mercury by 40% to 90%, and in some cases may, as a sole treatment option, be sufficient to meet MATS compliance. One of the advantages of the M-Prove™ technology is that it does not rely on bromine, which is the basis of many other competing chemical sorbent additive technologies. The power industry is beginning to experience corrosion and wastewater issues in their plants that they attribute to the use of bromine to enhance the capture of mercury. We believe that demand for M-Prove™ technology may accelerate after the majority of plants commence operations of their mercury control systems in early 2016. In October 2012, we were awarded the first of what we believe will be a family of patents designed to protect this technology both in the US and abroad.

The Company licenses certain emissions control technologies to CCS for the production of RC. ADA's CyClean™, M-45™ and M-45-PC™ technologies all incorporate the M-Prove™ additive, along with other additives, to reduce emissions of both mercury and NO_X from coal-fired boilers. ADA licensed its patented CyClean™ technology to CCS upon formation of the entity in 2006, for use with cyclone boilers for the life of the patents. In July 2012, ADA licensed its M-45™ technology to CCS (the "M-45 License") for as long as IRC Section 45 tax credits are available in order to leverage CCS's operating expertise and allow CCS the ability to provide and use either the CyClean™ or

M-45™ technology to produce RC. In the third quarter of 2012, ADA made a technological advancement in the M-45™ technology that allows it to be effective in "pulverized coal" ("PC") boilers, which improvement is included in the terms of the M-45 License. In addition to the royalty payments discussed in the RC segment above, the use of M-Prove™ technology in the production of RC provides valuable operating data and validates the effectiveness of the M-Prove™ technology in a range of coal-fired boilers. ADA expects this information will help in its sales process for the M-Prove™ technology.

(ii) Flue Gas Chemicals and Services

We have deployed technologies for conditioning flue gas streams from coal-fired combustion sources. Our flue gas conditioning chemical allows existing air pollution control devices, such as electrostatic precipitators ("ESPs"), to operate more efficiently without the use of traditional SO_3 additives, which have been shown to be detrimental to effective mercury control by partially negating the effectiveness of certain sorbents used to absorb mercury, including activated carbon. Such treatment of the flue gas stream allows for effective collection of fly ash particles that would otherwise escape into the atmosphere. The use of the proprietary chemical blends may help existing marginally sized ESPs continue to operate effectively when applied exclusively or in combination with other chemicals such as hydrated lime, activated carbon products, or other high-resistivity materials. Our flue gas conditioning chemical is currently sold under the registered trademark RESPond®.

Competition

We are an established leader in the mercury control market for coal-fired electric power generators. We add significant value to our base offerings by having complementary products and services. Our expertise and experience in conducting full-scale emissions control demonstrations reflects our understanding of the application of the control technologies that customers find valuable. Our ability to provide users with performance guarantees on our equipment along with comprehensive testing services and overall compliance strategies enhances our competitive position in this market. In the RC market, we believe Chem-Mod LLC and licensees of the Chem-Mod technology are our principal competitors. In the emissions control ("EC") equipment market, we believe Norit Americas, Inc., a division of Cabot Corporation, Alstom Power, The Babcock & Wilcox Company, United Conveyor Corporation, Nol-Tec Systems, Inc. and Clyde Bergemann, Inc. are our principal competitors in the ACI market and that Nol-Tec Systems, Inc., United Conveyor Corporation, Clyde Bergemann, Inc., Nalco-Mobotec and Babcock & Wilcox are our principal competitors in the DSI market.

Competition within the RC market is based primarily on price, the number of tons of coal burned at the coal-fired power plant where the RC facilities are operating and the tax compliance facts associated with each RC facility. Competition for ACI systems is based primarily on price, quality, performance, terms of performance guarantees and the ability to meet the requested delivery and installation schedule. In addition, certain competitors have the ability to offer their own activated carbon for use in their ACI systems, which may provide them with a competitive advantage. Similar to ACI systems, competition for DSI systems is based primarily on price, quality, performance and the ability to meet the requested engineering, fabrication, delivery and installation schedule.

Our mercury control chemicals primarily compete against the use of activated carbon and brominated activated carbon, as well as the use of bromine applied to the coal prior to combustion. Because of a number of market and technology dynamics, there is not a definitive connection between the sale of mercury control systems and the ultimate supply of mercury control chemicals. Thus when we are successful with a contract for the ACI equipment, it does not guarantee that we will also sell that customer M-Prove™ coal additives, and when a customer buys a competitors' ACI system it does not mean that that customer is not a viable candidate for our chemicals.

Patents

As of December 31, 2015, we held 36 United States (U.S.) patents that were issued or allowed, 17 additional U.S. Provisionals or applications that were pending, and 13 international patent applications that were either pending or filed relating to different aspects of our technology. Our existing patents generally have terms of 15 to 20 years, measured from the application date, the earliest of which was in 1993. We consider many of our patents or pending patents to be critical to the ongoing conduct of our business.

Materials and Working Capital Practices

We purchase our materials, including equipment, fabricated modules and steel, from a variety of vendors for engineered ACI systems, components and other equipment we provide. Such equipment is available from numerous sources; however, based on the system requested by the customer we may determine that some sources are not suitable. We typically subcontract the major portion of the work associated with installation of such equipment to a variety of vendors, usually located near the work site.

Similarly, we purchase materials and components from a variety of vendors for the DSI systems fabricated at BCSI facilities. To date we have typically fabricated our own DSI silos, manifolds, lances, and control panels and integrate these components at our shop or at the power plant, but in the future we will outsource these activities.

We purchase our proprietary chemicals through negotiated blending contracts that include secrecy agreements with chemical suppliers located near major customers. These arrangements minimize transportation costs while assuring continuous supply of our proprietary chemical blends. The chemicals used are readily available, and there are several chemical suppliers that can provide us with our requirements. Supply agreements are generally renewed on an annual basis.

We do not provide any extended payment terms to our customers. We typically provide equipment warranties and performance guarantees related to our EC ACI and DCI systems. See "Risk Factors" and Note 14, in the Consolidated Financial Statements filed as a part of this Form 10-K.

Seasonality of Activities

The sale of chemicals and RC facility operation levels depend on the operations of the electric power generators to which the applicable chemicals are provided and RC facilities are located, respectively. These customers routinely schedule maintenance outages in the spring and/or fall depending upon the operation of the boilers. During the period in which an outage may occur, which may range from one week to over a month, no chemicals are used or RC produced and purchases from us and related revenues can be correspondingly reduced. The other aspects of our business are not seasonal in any material way.

Dependence on Major Customers

We depend upon our customer relationships with owners and operators of coal-fired power generation facilities, as well as general market demand for coal-fueled power generation. Our internal and external sales staff markets our technology through trade shows, mailings and direct contact with potential customers.

Through our investment in CCS we depend upon our relationships with owners and operators of coal-fired power generation facilities, including various electric utilities and tax equity investors. CCS is the exclusive licensee for purposes of producing RC for the CyClean™, M-45™ and M-45-PC™ technologies. CCS also depends on tax equity investors with significant concentration within an affiliate of Goldman Sachs ("GS") and, as described in Item 1A, these entities could renegotiate or terminate their leases or the utilities where the RC facilities are installed could materially reduce their use of RC.

Additional information related to major customers can be found in Note 18 of the Consolidated Financial Statements within Item 8 of this Form 10-K.

Research and Development Activities

In 2015 we conducted research and development directed toward the reduction of mercury emissions, DSI, RC activities, and CO_2 capture. Certain of this research and development, and specifically related to CO_2 capture, has been funded under contracts and/or cost reimbursement arrangements with the DOE and other third parties. Our R&D expense, net of DOE and industry cost-share partners, for R&D during the years ended December 31, 2015, 2014 and 2013 was $5.4 million, $1.5 million and $3.2 million, respectively. Prior to cost share reimbursements, we incurred expenses of $6.7 million, $3.6 million and $13.1 million on our own behalf on research and development activities related to further development of our technologies during 2015, 2014 and 2013, respectively. We engage in these activities in order to continue to develop technologies to bring to the broader emissions control market and to expand our own offerings into other areas. However, we expect that future research and development activities will decrease as the Company aligns the business with strategic objectives.

Refined Coal Data

The following table provides summary information related to the Company's investment in CCS and the related RC facilities as of December 31, 2015 and RC tons produced for the year ended December 31, 2015:

			Operating	
	# of RC Facilities	Not Operating	Invested	Retained
RC Facilities	28	14	12	2
RC tons produced (000's)			37,744	11,744

Additional information related to RC facilities is included within Item 7 of this Form 10-K.

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Backlog

Backlog represents the dollar amount of revenues we expect to recognize in the future from fixed-price contracts, primarily for ACI and DSI systems as well as certain consulting service contracts that have been signed as well as those that are currently in progress. The Company includes a project in backlog when a contract is executed. Backlog amounts include anticipated revenues associated with the original contract amounts, executed change orders, and any claims that may be outstanding with customers. It does not include contracts that are in the bidding stage or have not been awarded. As a result, the Company believes the backlog figures are firm, subject to customer modifications, alterations or cancellation provisions contained in the various contracts.

Backlog may not be indicative of future operating results. Estimates of profitability could increase or decrease based on changes in direct materials, labor and subcontractor costs, and indirect costs related to contract performance, such as indirect labor, supplies, tools and repairs, and any claims with customers. Backlog is not a measure defined by generally accepted accounting principles that are followed in the United States ("GAAP" or "U.S. GAAP") and is not a measure of profitability. The Company’s method for calculating backlog may not be comparable to methodologies used by other companies.

(in thousands)	EC
Backlog as of December 31, 2014	$144,099
New contracts	6,527
Change order and claims to existing contracts, net	2,102
Revenues recognized	(60,086)
Backlog as of December 31, 2015	$92,642

Employees

As of December 31, 2015 we employed 69 full-time and part-time personnel, including six ADES executives; 64 people were employed at our offices in Colorado and one was employed in each of Georgia, Illinois, Massachusetts, Ohio and Pennsylvania, respectively.

Copies of Reports

Our periodic and current reports are filed with the SEC pursuant to Section 13(a) of the Securities Exchange Act of 1934 and are available free of charge within 24 hours after they are filed with or furnished to the SEC at the Company’s website at www.advancedemissionssolutions.com. Alternatively, these reports can be accessed at the SEC’s website at www.sec.gov. The information contained on our web site shall not be deemed incorporated by reference in any filing under the Securities Act or the Exchange Act.

Copies of Corporate Governance Documents

The following Company corporate governance documents are available free of charge at the Company’s website at www.advancedemissionssolutions.com and such information is available in print to any stockholder who requests it by contacting the Secretary of the Company at 9135 South Ridgeline Boulevard, Suite 200, Highlands Ranch CO, 80129.

- Articles of Incorporation
- Bylaws
- Code of Ethics and Business Conduct
- Insider Trading Policy
- Whistleblower Protection Policy
- Audit Committee Charter
- Compensation Committee Charter
- Finance Committee Charter
- Nominating and Governance Committee Charter

Forward-Looking Statements Found in this Report

This Report contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934, or the Exchange Act, that involve risks and uncertainties. In particular such forward-looking statements are found in this Part I and under the heading “Management’s Discussion and Analysis of

Financial Condition and Results of Operation" in Part II, Item 7 below. Words or phrases such as "anticipates," "believes," "expects," "intends," "plans," "estimates," "predicts," the negative expressions of such words, or similar expressions are used i this Report to identify forward-looking statements, and such forward-looking statements include, but are not limited to, statements or expectations regarding:

(a) the scope and impact of mercury and other regulations or pollution control requirements, including the impact of the final MATS;
(b) the production of RC will qualify for IRC Section 45 tax credits in conjunction with the production of RC;
(c) expected growth or contraction in and potential size of our target markets;
(d) expected supply and demand for our products and services;
(e) increasing competition in the emission control market;
(f) our ability to satisfy warranty and performance guarantee provisions;
(g) expected dissolution and winding down of certain of our wholly-owned subsidiaries;
(h) future level of research and development activities;
(i) the effectiveness of our technologies and the benefits they provide;
(j) CCS's ability to profitably sell and/or lease additional RC facilities and/or RC facilities that may be returned to CCS, or recognize the tax benefits from their operations;
(k) probability of any loss occurring with respect to CCS Party Guarantees;
(l) the timing of awards of, and work and related testing under, our contracts and agreements and their value;
(m) the timing and amounts of or changes in future revenues, royalties earned, backlog, funding for our business and projects, margins, expenses, earnings, tax rate, cash flow, royalty payment obligations, working capital, liquidity and other financial and accounting measures;
(n) ability to refinance the loan under the Credit Agreement or obtain alternative financing;
(o) the outcome of current and pending legal proceedings;
(p) awards of patents designed to protect our proprietary technologies both in the U.S. and abroad;
(q) the materiality of any future adjustments to previously recorded reimbursements as a result of Department of Energy ("DOE") audits and the amount of contributions from the DOE and others towards planned project construction and demonstrations; and
(r) whether any legal challenges or Environmental Protection Agency ("EPA") actions will have a material impact on the implementation of the MATS or other regulations and on our ongoing business.

Our expectations are based on certain assumptions, including without limitation, that:

(a) coal will continue to be a major source of fuel for electrical generation in the United States;
(b) the IRS will allow the production of RC to qualify for IRC Section 45 tax credits;
(c) contracts we have with the DOE will continue to be funded at expected levels and we will be chosen to participate in additional contracts of a similar nature;
(d) we will continue as a key supplier of equipment, chemicals and services to the coal-fired power generation industry as it seeks to implement reduction of mercury emissions;
(e) current environmental laws and regulations requiring reduction of mercury from coal-fired boiler flue gases will not be materially weakened or repealed by courts or legislation in the future;
(f) we will be able to meet any performance guarantees we make and continue meet our other obligations under contracts;
(g) we will be able to obtain adequate capital and personnel resources to meet our operating needs and to fund anticipated growth and our indemnity obligations;
(h) we will be able to establish and retain key business relationships with other companies;
(i) orders we anticipate receiving will in fact be received;
(j) governmental audits of our costs incurred under DOE contracts will not result in material adjustments to amounts we have previously received under those contracts;
(k)

we will be able to formulate new chemicals and blends that will be useful to, and accepted by, the coal-fired boiler power generation business;

(l) we will be able to effectively compete against others;

(m) we will be able to meet any technical requirements of projects we undertake;

(n) CCS will be able to sell or lease the remaining RC facilities, including RC facilities that may be returned to CCS, to third party investors; and

(o) we will be able to utilize our portion of the Section 45 tax credits generated by operation of RC facilities for the benefit of the members of CCS.

The forward-looking statements included in this Report involve risks and uncertainties. Actual events or results could differ materially from those discussed in the forward-looking statements as a result of various factors including, but not limited to, timing of new and pending regulations and any legal challenges to or extensions of compliance dates of them; the government's failure to promulgate regulations or appropriate funds that benefit our business; changes in laws and regulations, accounting rules, prices, economic conditions and market demand; impact of competition; availability, cost of and demand for alternative energy sources and other technologies; technical, start up and operational difficulties; failure of the RC facilities to produce coal that qualifies for tax credits; termination of or amendments to the contracts for RC facilities; decreases in the production of RC; inability to commercialize our technologies on favorable terms; our inability to ramp up our operations to effectively address recent and expected growth in our business; loss of key personnel; potential claims from any terminated employees, customers or vendors; failure to satisfy performance guarantees; availability of materials and equipment for our businesses; intellectual property infringement claims from third parties; pending litigation; elevated spending on non-recurring cash expenses, which may last longer than expected or reductions in operating costs may be less than expected; identification of additional material weaknesses or significant deficiencies; as well as other factors relating to our business, as described in our filings with the U.S. Securities and Exchange Commission ("SEC"), with particular emphasis on the risk factor disclosures contained in those filings and in Item 1A of this Report. You are cautioned not to place undue reliance on the forward-looking statements made in this Report and to consult filings we have made and will make with the SEC for additional discussion concerning risks and uncertainties that may apply to our business and the ownership of our securities. The forward-looking statements contained in this Report are presented as of the date hereof, and we disclaim any duty to update such statements unless required by law to do so.

Item 1A. Risk Factors

RISKS RELATING TO OUR BUSINESS

The following risks relate to our business as of the date of this Report, or any alternative date specified. This list of risks is not intended to be exhaustive, but reflects what we believe are the material risks inherent in our business and the ownership of our securities as of the specified dates. A statement to the effect that the happening of a specified event may have a negative impact on our business, results of operations, profitability, financial condition, or the like, is intended to reflect the fact that such an event would be likely to have a negative impact on your investment in the Company, but should not imply the likelihood of the occurrence of such specified event. The order in which the following risk factors are presented is not intended as an indication of the relative seriousness of any given risk.

DEMAND FOR OUR PRODUCTS AND SERVICES DEPENDS SIGNIFICANTLY ON ENVIRONMENTAL LAWS AND REGULATIONS; UNCERTAINTY AS TO THE FUTURE OF SUCH LAWS AND REGULATIONS, AS WELL AS CHANGES TO SUCH LAWS AND REGULATIONS, OR GRANTING OF EXTENSIONS OF COMPLIANCE DEADLINES HAS HAD, AND WILL LIKELY CONTINUE TO HAVE, A MATERIAL EFFECT ON OUR BUSINESS.

A significant market driver for our existing products and services, and those planned in the future, are present and expected environmental laws and regulations, particularly those addressing the reduction of mercury and other emissions from coal-fired power plants. If such laws and regulations are delayed or are not enacted or are repealed or amended to be less strict, or include prolonged phase-in periods, or not enforced, our business would be adversely affected by declining demand for such products and services. For example:

- The implementation of environmental regulations regarding certain pollution control and permitting requirements has been delayed from time to time due to various lawsuits. The uncertainty created by litigation and reconsiderations of rule-making by the EPA has negatively impacted our business, results of operations and financial condition and will likely continue to do so.

- To the extent federal, state, and local legislation mandating that electric power generating companies serving a state or region purchase a minimum amount of power from renewable energy sources such as wind, hydroelectric, solar and geothermal, and such amount lessens demand for electricity from coal-fired plants, those mandates would likely reduce demand for our products and services.

Federal, state, and international laws or regulations addressing emissions from coal-fired facilities, climate change or other actions to limit emissions including public opposition to new coal power plants, has caused and could continue to cause electricity generators to transition from coal to other fuel and power sources, such as natural gas, nuclear, wind, hydroelectric and solar. The potential financial impact on us of future laws or regulations or public pressure will depend upon the degree to which electricity generators diminish their reliance on coal as a fuel source. That, in turn, will depend on a number of factors, including the specific requirements imposed by any such laws or regulations, the periods over which those laws or regulations are or will be phased in, the amount of public opposition, and the state and cost of commercial development of related technologies and processes. In addition, Public Utility Commissions may not allow utilities to charge consumers for and pass on the cost of emission control technologies without federal or state mandate. In view of the significant uncertainty surrounding each of these factors, we cannot reasonably predict the impact that any such laws or regulations or public opposition may have on our results of operations, financial condition or cash flows.

THE ABILITY OF CCS TO GENERATE REVENUES FROM THE SALE OR LEASE OF RC FACILITIES TO INVESTORS IS NOT ASSURED, AND THE INABILITY TO SELL, LEASE OR OPERATE RC FACILITIES TO GENERATE IRC SECTION 45 TAX CREDITS COULD ADVERSELY AFFECT OUR FUTURE GROWTH AND PROFITABILITY.

Except for RC facilities that CCS may retain and operate permanently for its own account, CCS is attempting to sell or lease the remaining RC facilities to investors. The inability of CCS to successfully lease or sell additional RC facilities, or RC facilities that may be returned to CCS over time, to third party investors who will receive the benefit of the IRC Section 45 tax credits that it expects to generate from those RC facilities would likely have an adverse effect on future growth and profitability.

Furthermore, if in the future electric power generators decide to limit coal-fired generation for economic reasons and/or not to burn and use RC and instead switch to another power or fuel source, CCS would likely be unable to fully generate the IRC Section 45 tax credits potentially available from RC facilities over the anticipated term of the IRC Section 45 tax credit

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program. In addition, pursuant to CCS's Operating Agreement, if CCS is unable to generate enough revenue through the sale or lease of RC facilities over the next eight years to return the unrecovered investment balance, on an investment in CCS of $60 million made by GSFS, an affiliate of GS, plus a 15% annual return thereon, then GSFS may require CCS to redeem its interest in CCS for any deficit of such amount not distributed to GSFS. As of December 31, 2015, the unrecovered investment balance, inclusive of the 15% annual return was $30.4 million, as shown in the CCS Consolidated Financial Statements, included within Item 15 of this Form 10-K.

MARKET UNCERTAINTY CREATED BY THE LACK OF GUIDANCE AND RULINGS ISSUED BY COURTS AND THE IRS COULD INHIBIT CCS's ABILITY TO LEASE OR SELL ADDITIONAL RC FACILITIES OR REQUIRE A RESTRUCTURING OF, OR RESULT IN THE TERMINATION OF, EXISTING ARRANGEMENTS.

The availability of IRC Section 45 tax credits to taxpayers investing in RC facilities depends upon a number of factors, including the risk assumed by the taxpayer in the RC facility investment transaction. The law addressing when a taxpayer may and may not avail itself of IRC Section 45 tax credits is not fully developed and is subject to rulings by courts, interpretations by the IRS and other official pronouncements on tax credit regulations. If rulings, guidance or other pronouncements of courts or the IRS are lacking or are interpreted as allowing the IRS to restrict availability, increase the difficulty, or prohibit or limit the ability of taxpayers to take advantage of IRC Section 45 tax credits, several aspects of our current and future RC business could be adversely impacted. For example, current investors in RC facilities may decide to terminate their existing agreements or potential investors may reduce the price they are willing to pay or change the structure of the investment to account for perceived risks associated with IRC Section 45 tax credits. Finally, for four years after an RC facility is placed in service it is eligible to generate IRC Section 45 tax credits referred to as "specified credits" which are attractive to individual taxpayers. Since the time period to generate specified credits passed at the end of December 2015, individual taxpayers may no longer participate in the market and the size of the pool of taxpayers wishing to lease or buy an RC facility has been reduced.

TECHNICAL OR OPERATIONAL PROBLEMS WITH LONG-TERM OPERATION OF OUR RC FACILITIES COULD RESULT IN ADDITIONAL COSTS AND DELAYS THAT ADVERSELY AFFECT OUR FINANCIAL CONDITION.

The initial RC facilities were operated using CyClean™ technology at cyclone boilers. CCS began operating RC facilities using its M-45™ technology at circulating fluidized bed ("CFB") boilers in 2012 and pulverized coal ("PC") boilers in 2013. Given the different technology and boilers, the likelihood for technical or operational problems may be increased. Any such problems could result in decreased production of RC at such facilities and/or delays in, or postponement or cancellation of, expected potential future installations and operations at electric power generators and would likely have a material adverse effect on our business, financial condition and results of operations.

PRESENT RELIANCE UPON ONE INVESTOR FOR A SUBSTANTIAL PORTION OF OUR EARNINGS FROM CCS AND ANY RENEGOTIATION BY OR LOSS OF THIS INVESTOR OR ANY FAILURE TO CONTINUE TO PRODUCE RC AT THE INVESTOR'S RC FACILITIES WOULD HAVE A MATERIAL ADVERSE EFFECT ON OUR BUSINESS.

As of December 31, 2015, ten of CCS's 28 RC facilities are leased to entities related to affiliates of GS. Significant components of our total cash flows come from CCS distributions relating to these leases. These leases have an initial fixed period and then automatically renew, unless terminated at the option of the lessee, for successive one-year terms through 2019 or 2021. If these GS related entities renegotiated or terminated their leases or if the utilities where the RC facilities are installed materially reduce their use of RC, this would have a material adverse effect on our business, results of operations or financial condition. Certain GS related entities renewed their leases in the first quarter of 2016 with some of them including renegotiated less favorable terms.

REDUCTION OF COAL CONSUMPTION BY U.S. ELECTRIC POWER GENERATORS COULD RESULT IN LESS DEMAND FOR OUR PRODUCTS AND SERVICES. IF UTILITIES SIGNIFICANTLY REDUCE THE NUMBER OF COAL FIRED POWER PLANTS OR THE AMOUNT OF COAL BURNED, WITHOUT A CORRESPONDING INCREASE IN THE SERVICES REQUIRED AT THE REMAINING PLANTS. THIS COULD REDUCE OUR REVENUES AND MATERIALLY AND ADVERSELY AFFECT OUR BUSINESS, FINANCIAL CONDITION, AND RESULTS OF OPERATIONS.

The amount of coal consumed for U.S. electric power generation is affected by, among other things (1) the location, availability, quality and price of alternative energy sources for power generation, such as natural gas, fuel oil, nuclear, hydroelectric, wind, biomass and solar power; and (2) technological developments, including those related to alternative energy sources.

Natural gas-fueled generation has been displacing and may continue to displace coal-fueled generation, particularly from older, less efficient coal-powered generators. We expect that many of the new power plants needed to meet increasing demand for electricity generation will be fueled by natural gas because the price of natural gas has remained at relatively low levels after a period of sharp decline, gas-fired plants are cheaper to construct and permits to construct these plants are easier to obtain as natural gas is seen as having a lower environmental impact than coal-fueled generators, and ongoing costs associated with meeting environmental compliance are lower. Possible advances in technologies and incentives, such as tax credits, to enhance the economics of renewable energy sources could make these sources more competitive with coal. Several large U.S.-based banks have publicly indicated they will no longer finance new coal-fired power plants in the U.S. and at least five large coal companies have recently filed bankruptcy. Any reduction in the amount of coal consumed by domestic electric power generators could reduce the demand for our current products and services, thereby reducing our revenues and materially and adversely affecting our business and results of operations.

Additionally, long-term changes in environmental regulation that threaten or preclude the use of coal or other fossil fuels as a primary fuel source for electricity production, and result in the reduction or closure of a significant number of coal-fired power plants, may adversely affect our business, financial condition and results of operations.

OUR DEPENDENCE ON THIRD PARTIES FOR MANUFACTURING KEY COMPONENTS OF OUR SYSTEMS MAY CAUSE DELAYS IN DELIVERIES, INCREASED WARRANTY CLAIMS, AND INCREASED COSTS TO US.

Between 2012 and 2015, we owned and controlled only one manufacturing and assembly facility for our DSI systems. In accordance with our previous disclosures, manufacturing and assembly operations at that facility, located in McKeesport, PA, were shut down at the end of 2015. Like most of our competitors, we currently rely heavily upon third parties for the manufacture, assembly and some of the testing of key components, such as tanks, for our ACI systems and in the future will also rely on third parties for our DSI systems. Delays or difficulties in the manufacturing, assembly, or delivery of key components of our products could harm our business and financial condition.

There are limited sources of acceptable supply for some key ACI and DSI system components. Business disruptions, financial difficulties of third party suppliers or raw material shortages could increase the cost of our goods sold or reduce the availability of these components. Although the record high customer orders for ACI and DSI systems in 2013 and 2014 decreased for 2015, the supplier marketplace continues to feel the impact of the rapid and substantial increase in the need for components and materials. If we are unable to obtain a sufficient supply of required components that meet customer specifications in a timely manner, we could experience significant delays in delivery or increased warranty claims, associated with delivery and product performance. Similarly, as we shut down the McKeesport facility and outsource activities to third parties, any significant disruption could result in delays or customer claims. Disruptions of these types could result in the loss of orders or customers or liability for liquidated damages which could materially and adversely affect our business, financial condition and results of operations.

PENDING SECURITIES CLASS ACTION LITIGATION AND DERIVATIVE ACTION COULD DIVERT MANAGEMENT’S FOCUS, RESULT IN SUBSTANTIAL INVESTIGATION EXPENSES, AND HAVE AN ADVERSE IMPACT ON OUR REPUTATION, FINANCIAL CONDITION AND RESULTS OF OPERATIONS.

On May 1, 2014, we became the defendant in a class action lawsuit in the United States District Court for the District of Colorado, where it is alleged that the Company violated federal securities laws by making materially false and misleading statements, among other things. At that time, Plaintiffs were seeking compensatory damages for alleged injuries incurred between March 14, 2013 and April 23, 2014. Plaintiffs amended their complaint on April 20, 2015 to extend the period for which they will seek damages to May 12, 2011 through January 23, 2015. On July 2, 2014, certain of our current and former executive officers and directors became defendants in stockholder derivative litigation alleging breaches of fiduciary duties, waste of corporate assets, utilization of improper accounting techniques and failure to maintain effective internal controls that together resulted in materially inaccurate financial statements from which incentive compensation was derived and paid. This derivative action has been stayed until after certain matters in the class action lawsuit have been ruled on by the court. While we are defending both actions vigorously, the outcome of these actions or the court rulings may substantially harm our business. We have incurred significant legal expenditures in connection with these actions, and we are unable to predict the duration, scope, developments in, results of, or the consequences of the actions. The lawsuits could in the future result in the imposition of damages, additional civil lawsuits, interruptions of business, modification of business practices and equitable remedies against us or our personnel as well as significant legal and other costs. Because the matters are ongoing, we cannot assure you as to how the resulting consequences, if any, may impact our business, reputation, financial condition, results of operations and cash flow. We cannot currently estimate the potential liability, damages, or range of potential loss, if any, as a result of the legal proceedings. Furthermore, publicity surrounding these actions, even if ultimately resolved favorably for us, could have an adverse impact on our reputation, business, financial condition, results of operations, and cash flows.

IF THE QUALITY AND EFFECTIVENESS OF OUR TECHNOLOGIES, PRODUCTS AND SERVICES DO NOT MEET OUR CUSTOMERS’ EXPECTATIONS, THEN OUR SALES, RESULTS OF OPERATIONS AND ULTIMATELY OUR REPUTATION COULD BE NEGATIVELY IMPACTED.

If flaws in the design, production, assembly, delivery, installation or providing of our technologies, products or services (caused by us or our suppliers) were to occur, we could experience substantial liquidated damages, repair, replacement or service costs and potential damage to our reputation. We have provided warranties and performance guarantees for certain ACI and DSI systems we have sold. Under those contractual arrangements we are responsible for repair or replacement costs and certain operating costs, within the limits provided by the contracts, if the agreed specifications are not met. Continued improvement in manufacturing capability assessment and quality control, technological development, supply-chain management, product testing, installation, delivery and other costs, are critical factors in our future growth and meeting our customers’ expectations. Our efforts to monitor, develop, modify and implement appropriate technologies, designs and processes for the manufacture, installation and testing of our products may not be sufficient to avoid failures and meet performance criteria that may result in dissatisfied customers, significant repair or replacement costs or potential damage to our reputation, any of which could have a material adverse effect on our business, results of operations or financial condition.

OUR BUSINESSES THAT ARE JOINT VENTURES ARE MANAGED VIA OPERATING AGREEMENTS WHERE WE DO NOT HAVE SOLE CONTROL OF THE DECISION MAKING PROCESS AND WE CANNOT MANDATE DECISIONS OR ENSURE OUTCOMES.

We oversee our joint ventures via operating agreements and by participating in the following activities: (1) representation on the respective governing Boards, (2) regular oversight of financial and operational performance and controls and establishing audit and reporting requirements, (3) hiring of management personnel, (4) technical support of RC facilities, and (5) other regular and routine involvement with our joint venture partners. Notwithstanding this regular participation and oversight, our joint venture partners also participate in the management of these businesses and they may have business or economic interests that divert their attention from the joint venture or they may prefer to operate the business, make decisions or invest resources in a manner that is contrary to our preferences. Since material business decisions must be made jointly with our joint venture partners, we cannot mandate decisions or ensure outcomes.

FAILURE TO PROTECT OUR INTELLECTUAL PROPERTY OR INFRINGEMENT OF OUR INTELLECTUAL PROPERTY BY A THIRD PARTY COULD HAVE AN ADVERSE IMPACT ON OUR FINANCIAL CONDITION.

We rely on a combination of patent, copyright and trademark laws, trade secrets, confidentiality procedures and contractual provisions to protect our proprietary rights. Such means of protecting our proprietary rights may not be adequate because they provide only limited protection. We also enter into confidentiality and non-disclosure agreements with our employees, consultants, many of our customers, and many of our vendors and generally control access to and distribution of our proprietary information. Notwithstanding these precautions, a third party could copy or otherwise obtain and use our proprietary information without authorization. We cannot assure you that the steps taken by us will prevent misappropriation of our technology and intellectual property, which could result in injury to our business and financial condition. In addition, such actions would divert the attention of our management from the operation of our business.

WE MAY BE SUBJECT TO INTELLECTUAL PROPERTY INFRINGEMENT CLAIMS FROM THIRD PARTIES THAT ARE COSTLY TO DEFEND AND THAT MAY LIMIT OUR ABILITY TO USE THE DISPUTED TECHNOLOGIES.

Companies in the business of developing technology face the risk of being subject to intellectual property infringement claims that are costly to defend. As a company regularly involved in developing and commercializing new technologies, we may be subject to intellectual property infringement claims from third parties, the defense of which would likely be costly in terms of monetary expenses and management demands. If our technologies infringe the intellectual property rights of others, we may be prevented from continuing sales of existing products or services and from pursuing research, development or commercialization of new products or services. Further, we may be required to obtain licenses to third party intellectual property, or be forced to develop or obtain alternative technologies. Our failure to obtain a license to any technology that we may require or to develop or obtain alternative technologies could significantly and negatively affect our business.

WE HAVE AGREEMENTS TO INDEMNIFY THIRD PARTIES AGAINST INTELLECTUAL PROPERTY CLAIMS CONCERNING LICENSED TECHNOLOGY AND OUR PRODUCTS THAT COULD BE SIGNIFICANT.

We have agreed to indemnify licensees of our technologies (including CCS and Arch Coal, Inc.) and purchasers of our products and may enter into additional agreements with others under which we agree to indemnify and hold the third party harmless from and against losses it may incur as a result of the infringement of third party rights caused by the use of our technologies and products. Infringement claims, which are expensive and time-consuming to defend, could have a material adverse effect on our business, operating results and financial condition, even if we are successful in defending ourselves (and indemnified parties) against them.

OUR FUTURE SUCCESS DEPENDS IN PART ON OUR ONGOING IDENTIFICATION AND DEVELOPMENT OF INTELLECTUAL PROPERTY AND OUR ABILITY TO INVEST IN AND DEPLOY NEW PRODUCTS, SERVICES, AND TECHNOLOGIES INTO THE MARKETPLACE EFFICIENTLY AND COST EFFECTIVELY.

The process of identifying customer needs, and developing and enhancing products, services and solutions for our various business segments is complex, costly and uncertain. Any failure by us to identify and anticipate changing needs, emerging trends and new regulations could significantly harm our future market share and results of operations. Historically, our approach to technology development, implementation and commercialization has focused on quickly taking technology to full-scale testing, and enhancing it under actual power plant operating conditions. We continue to review and adjust methods to deploy products, services and technologies to our customers. We may focus our resources on technologies, services or products that are not widely accepted or commercially viable, or on operational processes that that are not profitable even after significant up-front investment of our resources such as occurred with our previously disclosed decisions to shut down our Israel and McKeesport, PA investments. Our results are subject to risks related to our significant investments but if we are unable to develop and scale up new technologies, products, and services to meet the needs of our customers, our financial results would be adversely affected.

AN INJURY TO OR DEATH OF ONE OF OUR EMPLOYEES COULD RESULT IN MATERIAL LIABILITIES TO THE COMPANY.

The industrial activities conducted at our and our customer’s facilities present significant risk of serious injury or death to our employees, customers or visitors to our operations, notwithstanding our efforts to comply with safety regulations. We may be unable to avoid material liabilities for an injury or death, and our workers’ compensation and other insurance policies may not be adequate or may not continue to be available on terms acceptable to us, or at all, which could result in material liabilities to us.

THE EFFECTS OF PROVIDING WARRANTIES AND PERFORMANCE GUARANTEES FOR EQUIPMENT OR CCS PROVIDING PAYMENT AND PERFORMANCE GUARANTEES OF ITS RC FACILITIES ARE LARGELY UNKNOWN AND COULD ADVERSELY AFFECT OUR FINANCIAL CONDITION.

Providing warranties that generally do not extend beyond 12 months from the installation date have been and will likely continue to be an integral part of successful sales of our products and services. Providing certain performance guarantees during a discrete performance testing period that generally do not extend beyond six months from the initial test date have been and will likely continue to be an integral part of successful sales of our products and services. Guarantees with respect to our ACI and DSI systems typically require the equipment to meet stated injection rates of a specified or approved absorbent or alkali material. In some cases, guarantees might require that emissions of certain pollutants (such as mercury) be reduced by a specified amount if certain operating parameters of the generating facility, including the nature of the coal burned, are met. Such guarantees generally require us to spend amounts up to the value of the sales contract to “make right” the performance of the ACI or DSI system if the guaranteed level of performance is not achieved. In 2014 and 2015, we provided certain customers with stronger guarantees and remedies. Although we believe compliance with these stronger guarantees and remedies is probable, these stronger guarantees and remedies place us at greater risk and may also require us to delay revenue recognition on such contracts. In addition to guarantees on ACI and DSI systems we sell, CCS indemnifies certain utilities and lessees of RC facilities for particular risks associated with the operations of certain facilities. We have provided limited joint and several guarantees of CCS’s obligations under those leases. Any substantial payments made under such guarantees could have a material adverse effect on our financial condition, results of operations and cash flows.

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MATERIAL ADJUSTMENTS PURSUANT TO DEPARTMENT OF ENERGY ("DOE") AUDITS OF OUR PAST PERFORMANCE COULD HAVE A DETRIMENTAL IMPACT ON OUR BUSINESS.

Certain of our completed and current contracts awarded by the DOE and related industry participants remain subject to government audits. Our historical experience with these audits has not resulted in significant adverse adjustments to amounts previously received; however audits for the years 2010 and later have not been finalized. If the results of future audits require us to repay material amounts, our results of operations and business would likely suffer material adverse impacts.

CHANGES IN TAXATION RULES OR FINANCIAL ACCOUNTING STANDARDS COULD ADVERSELY AFFECT OUR RESULTS OF OPERATIONS OR FINANCIAL CONDITION.

Changes in taxation rules and accounting pronouncements (and changes in interpretations of accounting pronouncements) have occurred and may occur in the future. A change in existing taxation rules, particularly those related to IRC Section 45 tax credits or the ability of taxpayers to benefit from tax credits or NOL or accounting standards could have an adverse effect on our reported or future results of operations or financial condition and could also impact our businesses that generate tax credits.

INFORMATION TECHNOLOGY VULNERABILITIES AND CYBERATTACKS ON OUR NETWORKS COULD HAVE A MATERIAL ADVERSE IMPACT ON OUR BUSINESS.

We rely upon information technology to manage and conduct business, both internally and with our customers, suppliers and other third parties. Internet transactions involve the transmission and storage of data, including in certain instances customer and supplier business information. Thus, maintaining the security of computers and other electronic devices, computer networks and data storage resources is a critical issue for us and our customers and suppliers, because security breaches could result in reduced or lost ability to carry on our business and loss of and/or unauthorized access to confidential information. We have limited personnel and other resources to address information technology reliability and security of our computer networks and respond to known security incidents to minimize potential adverse impact. Experienced hackers, cybercriminals and perpetrators of threats may be able to penetrate our network security and misappropriate or compromise our confidential information or that of third parties, create system disruptions or cause shutdowns. These perpetrators of cyberattacks also may be able to develop and deploy viruses, worms, malware and other malicious software programs that attack our information and networks or otherwise exploit any security vulnerabilities of our information and networks. Techniques used to obtain unauthorized access to or sabotage systems change frequently and often are not recognized until long after being launched against a target so that we may be unable to anticipate these techniques or to implement adequate preventative measures. A breach of our IT systems and security measures as a result of third-party action, malware, employee error, malfeasance or otherwise could materially adversely impact our business and results of operations and expose us to customer, supplier, and other third party liabilities.

WE HAVE MADE AND MAY MAKE FUTURE ACQUISITIONS OR FORM PARTNERSHIPS AND JOINT VENTURES WHICH INVOLVE NUMEROUS RISKS THAT COULD IMPACT OUR FINANCIAL CONDITION, RESULTS OF OPERATIONS AND CASH FLOWS.

Our strategy may include expanding our scope of products and services organically or through selective acquisitions, investments or creating partnerships and joint ventures. We have acquired, and may selectively acquire, other businesses, product or service lines, assets or technologies that are complementary to our business. We may be unable to find or consummate future acquisitions at acceptable prices and terms or we may be unable to integrate existing or future acquisitions effectively and efficiently and may need to divest those acquisitions as we did with our acquired operations in Israel and fabrication facility in McKeesport, PA. We continually evaluate potential acquisition opportunities in the ordinary course of business. Acquisitions involve numerous risks, including among others:

- Integration difficulties including challenges and costs associated with implementing systems and processes to comply with requirements of being part of a publicly traded company;
- diverting management’s attention from normal daily operations of the business;
- entering markets in which we have no or limited direct prior experience and where competitors in such markets have stronger market positions;
- unanticipated costs and exposure to undisclosed or unforeseen liabilities or operating challenges;

- potential loss of key employees and customers of the acquired businesses, product or service lines, assets or technologies;
- our ability to properly establish and maintain effective internal controls over an acquired company; and
- increasing demands on our operational and information technology systems.

Although we conduct what we believe to be a prudent level of investigation regarding the operating and financial condition of acquisitions we have made, an unavoidable level of risk remains regarding their actual operating and financial condition. Until we actually assume operating control of these acquisitions, we may not be able to ascertain their actual value, costs or exposures to liabilities. This is particularly true with respect to acquisitions outside the United States.

In addition, acquisitions of businesses may require additional debt or equity financing, resulting in additional leverage or dilution of ownership. Our loan agreements contains certain covenants that limit, or that may have the effect of limiting, among other things acquisitions, capital expenditures, the sale of assets and incurrence of additional indebtedness.

CUSTOMERS MAY CANCEL OR DELAY PROJECTS AND OUR BACKLOG MAY NOT BE INDICATIVE OF OUR FUTURE REVENUE.

Customers may cancel or delay projects for reasons beyond our control. Our orders normally contain cancellation provisions that permit us to recover our costs, and, for most contracts, a portion of our anticipated profit if a customer cancels an order. If a customer cancels an order, we have to recognize our costs and revenues immediately and may not achieve the full amount of our backlog. If projects are delayed, the timing to recognize our revenues, particularly when using the completed contract method of accounting, will be adversely impacted and projects may remain in our backlog for extended periods of time. Revenue recognition can occur over long periods of time and is subject to unanticipated delays and quarterly fluctuations which may also impact quarterly backlog. As a result, our backlog may not be indicative of our future revenues.

OUR SHORT-TERM LOAN AGREEMENT MATURES ON JULY 8, 2016 AND ALLOWS OUR LENDERS TO REQUIRE REPAYMENT OF OUR DEBT AT A PREMIUM IF CERTAIN EVENTS, INCLUDING EVENTS OF DEFAULT OR A CHANGE OF CONTROL, OCCUR.

Our short term loan agreement matures on July 8, 2016 and may become due earlier based on certain customary events requiring mandatory prepayment, including upon certain asset sales or receipts of certain types of cash proceeds outside the ordinary course of business, upon a change of control, and upon a default. Prepayments will, subject to certain exceptions, be required to be paid with a prepayment premium of 4% except in the case of a change of control, in which case the prepayment premium is 1%. Events of default include if the Company fails to file all periodic reports with the SEC by April 20, 2016 and if CCS fails to lease or sell two new refined coal facilities by June 30, 2016. Despite the Company's best efforts, CCS' ability to lease or sell refined coal facilities is dependent on factors beyond our control. If we are unable to refinance or extend the loan or engage in other transactions to generate the necessary cash flow to pay our loan at maturity or due to a mandatory prepayment event, we may not have sufficient funds to pay such indebtedness, including prepayment penalties, and our lenders would be entitled to proceed against the collateral securing the indebtedness, which includes substantially all of our assets, to the extent permitted by the short term loan agreement and applicable law.

WE ARE EXPOSED TO RISKS RELATING TO EVALUATIONS OF OUR INTERNAL CONTROL OVER FINANCIAL REPORTING REQUIRED BY SECTION 404 OF THE SARBANES-OXLEY ACT OF 2002, THE MATERIAL WEAKNESSES IDENTIFIED PURSUANT TO SUCH EVALUATIONS AND THE REMEDIATION OF SUCH MATERIAL WEAKNESSES.

We are required to comply with Section 404 of the Sarbanes-Oxley Act of 2002.

On February 29, 2016 the Company filed its Annual Report on Form 10-K for the fiscal year ended December 31, 2014 (the "2014 Form 10-K") which included the restatement of selected financial data for the years ended December 31, 2010 and 2011 and 2012, its consolidated financial statements for the year ended December 31, 2012, and the unaudited quarterly financial information for the quarterly periods ended March 31, 2013, June 30, 2013, and September 30, 2013 (collectively, the "Restatement"). Management determined that the issues leading to the restatements arose because of material weaknesses in the Company’s internal control over financial reporting discussed in further detail in Item 9A to this Form 10-K. A “material weakness” is a control deficiency, or combination of significant deficiencies, that results in more than a remote likelihood that a material misstatement of the annual or interim financial statements will not be prevented or detected. Management has taken steps to remediate the material weaknesses that it identified, but as of the date of this filing, the remediation of these material weaknesses is ongoing. Failure to comply with Section 404, identify further material weaknesses, if any, or remediate current material weaknesses may cause our financial statements to be inaccurate, investors to lose confidence in our financial statements, and our stock price to be adversely affected. In addition, we may be subject to additional stockholder litigation, additional increases in insurance costs, and more limited access to the capital markets, and our stock price may be adversely affected.

INVESTIGATION AND LEGAL AND EXPERT SERVICES REGARDING THE RESTATEMENT AND LEGAL PROCEEDINGS HAS REQUIRED SUBSTANTIAL ATTENTION FROM THE BOARD OF DIRECTORS AND HAS DIVERTED FINANCIAL RESOURCES AWAY FROM THE COMPANY AND MANAGEMENT'S ATTENTION AWAY FROM OUR USUAL BUSINESS OPERATION AND MAY CONTINUE TO ADVERSELY AFFECT OUR BUSINESS, RESULTS OF OPERATIONS AND FINANCIAL CONDITION.
In March 2014, the Company, under the oversight of our Audit Committee with the assistance of outside counsel, began an internal investigation into accounting matters related to the Restatement. The internal investigation is currently aligned with our efforts to cooperate with the SEC Inquiry, as defined and described under Item 3 of this Form 10-K. Our Board of Directors, Audit Committee and members of management have devoted and expect to continue to devote substantial internal and external resources to investigation and cooperation with the SEC Inquiry and remediation efforts. As a result of these efforts, we have incurred and expect that we will continue to incur significant incremental fees and expenses for additional auditor services, financial and other consulting services and legal services, as well as the implementation and maintenance of systems and processes that will need to be updated, supplemented or replaced. These expenses, as well as the substantial time devoted by our Board and management towards identifying, addressing and remediating any internal weaknesses and legal costs related to investigation and related litigation, claims and other actions related to the Restatement, have had and could continue to have a material adverse effect on our business, results of operations and financial condition.

WE ARE THE SUBJECT OF AN ONGOING SEC INVESTIGATION, WHICH HAS DIVERTED AND COULD CONTINUE TO DIVERT MANAGEMENT’S FOCUS, RESULT IN SUBSTANTIAL INVESTIGATION EXPENSES AND HAVE AN ADVERSE IMPACT ON OUR REPUTATION, FINANCIAL CONDITION AND RESULTS OF OPERATIONS.
As a result of filing a 2014 Form 10-K and not filing a 2013 Form 10-K, the Restatement of our financial results for the years ended December 31, 2011 to 2012 and the first three quarters of 2013, and the untimely filing of our Annual and Quarterly Reports on Form 10-K and Forms 10-Q for the fiscal year ended December 31, 2015, current and prospective investors will be unable to review certain financial and informational disclosures that would have been contained in the full periodic reports and did not receive information in a timely fashion. Such reporting deficiencies may be considered by the SEC when assessing the Company’s compliance with federal securities laws as part of the SEC Inquiry, described under Item 3 of this Form 10-K. We continue to cooperate with the SEC and have incurred significant legal and accounting expenditures in connection with our internal investigation efforts and response to the SEC Inquiry.

We are unable to predict how long the SEC Inquiry will continue or whether, at the conclusion of its investigation, the SEC will seek to impose fines or take other actions against us. Any action by the SEC could result in sanctions against us and/or certain of our current and former officers and directors. A protracted investigation could impose substantial additional costs and distractions, regardless of its outcome. Furthermore, publicity surrounding the foregoing or any enforcement action as a result of the SEC’s investigation, even if ultimately resolved favorably for us, could have an adverse impact on our reputation, business, financial condition, results of operations and cash flows.

INABILITY TO PREPARE AND TIMELY FILE PERIODIC REPORTS LIMITS OUR ACCESS TO THE PUBLIC MARKETS TO RAISE DEBT OR EQUITY CAPITAL AND COULD RESULT IN INCREASED TRANSACTION COSTS.

We are required to comply with Section 13 of the Securities Exchange Act of 1934. Beginning December 31, 2013 through September 30, 2015, we did not file Annual and Quarterly Reports on Form 10−Ks and Form 10-Qs. Because we have not remained current in our reporting requirements with the SEC, we are limited in our ability to access the public markets to raise debt or equity capital. Our limited ability to access the public markets could prevent us from implementing business strategies that we may otherwise believe are beneficial to our business. Until one year after the date we maintain compliance with our SEC reporting obligations, we will be ineligible to use shorter and less costly filings, such as Form S−-3, to register our securities for sale. We may use Form S-1 to register a sale of our stock to raise capital, but doing so would likely increase transaction costs and adversely affect our ability to raise capital in a timely manner.

OUR ACCESS TO CAPITAL AND LIQUIDITY MAY CONTINUE TO BE IMPACTED.

If we do not receive sufficient royalty payments or distributions from CCS to repay the obligations of our short-term loan agreement while maintaining sufficient liquidity to meet our operating requirements, we may need to extend or refinance the short-term loan or seek alternative sources of capital, under less favorable terms and conditions which could have a material adverse effect on our business, results of operations and financial condition.

RISKS RELATING TO OUR COMMON STOCK

OUR STOCK PRICE MAY CONTINUE TO BE VOLATILE.

The market price of our common stock fluctuates significantly. The market price of our common stock may be affected by numerous factors, including:

- Actual or anticipated fluctuations in our operating results and financial condition;
- Changes in laws or regulations and court rulings and trends in our industry;
- CCS's ability to lease or sell RC facilities;
- Announcements of sales awards;
- Changes in supply and demand of components and materials;
- Adoption of new tax or accounting standards affecting our industry;
- Changes in financial estimates by securities analysts;
- Perceptions of the value of corporate transactions; and
- The degree of trading liquidity in our common stock and general market conditions.

From December 31, 2012 to December 31, 2015, the closing price of our common stock ranged from $3.70 to $29.00 per share (retroactively restated to reflect the two-for-one stock split of our common stock, which was effected in the form of a common stock dividend distributed on March 14, 2014). Significant declines in the price of our common stock could impede our ability to obtain additional capital, attract and retain qualified employees and reduce the liquidity of our common stock.

In addition, the stock market has from time to time experienced significant price and volume fluctuations that have particularly affected the market prices for the common stock of similarly staged companies. These broad market fluctuations may adversely affect the market price of our common stock.

DELISTING OF OUR COMMON STOCK ON NASDAQ AND QUOTATION ON THE OTC BULLETIN BOARD MAY CONTINUE TO DECREASE THE VALUE OF OUR COMMON STOCK AND PREVENT CERTAIN INVESTORS FROM INVESTING OR ACHIEVING A MEANINGFUL DEGREE OF LIQUIDITY.

On January 30, 2015, we received notification from the NASDAQ Capital Market informing us of their decision to suspend the trading of our common stock on the NASDAQ on February 3, 2015. Our common stock was finally delisted on March 30, 2015. As a result, our common stock is now quoted on the Over– the-Counter Bulletin Board ("OTCBB") or the "pink sheets" traded under the symbol "ADES." Based upon the fact that our common stock is no longer registered for trading on a national automated quotation system, and the value of the common stock held has decreased in value, there may be investment loss for stockholders or certain stockholders may no longer be permitted to invest in our common stock. Bid quotations on the OTCBB can be sporadic and may not provide any meaningful liquidity to investors. An investor may find it difficult to dispose of shares or obtain accurate quotations as to the market value of the common stock. As a result of these limitations, our common stock has fewer market makers, lower trading volumes and larger spreads between bid and asked prices than securities listed on a national stock exchange or automated quotation system would typically have. These factors may result in higher price volatility and less market liquidity for our common stock. We cannot assure you that our common stock will be listed on a national exchange such as the NASDAQ Stock Market, the New York Stock Exchange, or another securities exchange once we become current in our filing obligations with the SEC.

OUR CERTIFICATE OF INCORPORATION AND BYLAWS CONTAIN PROVISIONS THAT MAY DELAY OR PREVENT AN OTHERWISE BENEFICIAL TAKEOVER ATTEMPT OF OUR COMPANY.

Certain provisions of our certificate of incorporation and bylaws could make it more difficult for a third party to acquire us, even if doing so would be beneficial to our stockholders. These include provisions that:

- Limit the business at special meetings to the purpose stated in the notice of the meeting;
- Authorize the issuance of "blank check" preferred stock, which is preferred stock with voting or other rights or preferences that could impede a takeover attempt and that the board of directors can create and issue without prior stockholder approval;
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- Establish advance notice requirements for submitting nominations for election to the board of directors and for proposing matters that can be acted upon by stockholders at a meeting; and
- Require the affirmative vote of the "disinterested" holders of a majority of our common stock to approve certain business combinations involving an "interested stockholder" or its affiliates, unless either minimum price criteria

or procedural requirements are met, or the transaction is approved by a majority of our “continuing directors” (known as “fair price provisions”).

These provisions, alone or in combination with each other, may discourage transactions involving actual or potential changes of control, including transactions that otherwise could involve payment of a premium over prevailing market prices to holders of our common stock, or could limit the ability of our stockholders to approve transactions that they may deem to be in their best interest. On February 1, 2015, we effected a stockholder rights plan that expired on February 1, 2016, as discussed in Note 12 of the Consolidated Financial Statements in this Form 10-K.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

Office and Warehouse Leases

As of December 31, 2015, we leased office, warehouse and laboratory space in Highlands Ranch, Colorado for a total of approximately 258,719 square feet under five leases. Original lease terms ranged from three to seven years. Certain of these leases have options permitting renewals for additional periods.

The Company’s lease of approximately 37,102 square feet of office space in Highlands Ranch, Colorado was entered into in 2012 and expires in February 2019 with the option to renew for two additional five-year periods. The lease included an abatement of base rent and operating expenses for the first six months and abatement of base rent for an additional thirteen months. The lease also included a one-time tenant improvement allowance in an amount up to approximately $0.7 million. Leasehold improvements are being amortized over the base term of the lease.

The Company's lease of approximately 15,035 square feet of warehouse space in Highlands Ranch, Colorado was entered into in 2012 and expires in February 2019 with the option to renew for two additional five-year periods. The lease also included a one-time tenant improvement allowance in an amount up to approximately $0.1 million. Leasehold improvements are being amortized over the base term of the lease.

The Company's lease of approximately 138,187 square feet of office and manufacturing space in McKeesport, Pennsylvania was entered into in 2013 and expires in September 2018 and includes the option to renew for one additional five-year term.

The Company's lease of approximately 40,696 square feet of manufacturing and office space in McKeesport, Pennsylvania was entered into in 2013 and expires in April 2016.

The Company's lease of approximately 27,699 square feet of shop space in McKeesport Pennsylvania was entered into in 2013 and expires in June 2016 and includes the option to renew for one additional three-year period.

The three preceding leases are collectively referred to as the McKeesport Leases.

Subsequent to December 31, 2015, the Company entered into an agreement to terminate and settle the remaining amounts owed under and all liabilities related to the McKeesport Leases. The Company will pay a total of $0.5 million, one-half of which is due in the second quarter of each of 2016 and 2017.

See Note 14 to our 2015 Consolidated Financial Statements in Item 8 of this Form 10-K for information with respect to our lease commitments as of December 31, 2015.

Item 3. Legal Proceedings

Securities class action lawsuit: United Food and Commercial Workers Union v. Advanced Emissions Solutions, Inc., No. 14-cv-01243-CMA-KMT (U.S. District Court, D. Colo.)

A class action lawsuit against ADES and certain of its current and former officers is pending in the federal court in Denver, Colorado. This lawsuit and a companion case were originally filed in May 2014. On February 19, 2015, the Court consolidated these cases and appointed the United Foods and Commercial Workers Union and Participating Food Industry Employers Tri-State Pension Fund as lead plaintiff and approved its selection of the law firms. The consolidated case is now captioned United

Food and Commercial Workers Union v. Advanced Emissions Solutions, Inc., No. 14-cv-01243-CMA-KMT (U.S. District Court, D. Colo.).

The lead plaintiff filed “Lead Plaintiff’s Consolidated Class Action Complaint” on April 20, 2015 (the “Consolidated Complaint”). The Consolidated Complaint names as defendants the Company and certain current and former Company officers.

Plaintiffs allege that ADES and other defendants misrepresented to the investing public ADES’s financial condition and its financial controls to artificially inflate and maintain the market price of ADES’s common stock. The Consolidated Complaint alleges two claims for relief for: 1) alleged violations of Section 10(b) of the Securities Exchange Act of 1934 and Rule 10b-5, and 2) control person liability under Section 20(a) of the Exchange Act.

The lawsuit seeks unspecified monetary damages together with costs and attorneys’ fees incurred in prosecuting the class action, among other relief. The Consolidated Complaint, alleges a class period covering all purchasers or acquirers of the common stock of ADES or its predecessor-in-interest during the proposed class period from May 12, 2011 through January 29, 2015.

Defendants filed a motion to dismiss the Consolidated Complaint on June 19, 2015, contending the Consolidated Complaint: 1) fails to meet the strict pleading standards required for Section 10(b) claims; and 2) fails to establish the primary violation required for any claim of secondary (control person) liability. Plaintiffs filed a response in opposition to this motion on July 2, 2015 and Defendants filed their reply brief on July 16, 2015. On March 7, 2016 the parties filed a stipulated motion to stay the case while the parties mediate the matter. On March 8, 2016, the motion to stay was granted, and the Defendants’ motion to dismiss was denied without prejudice with the option to refile should mediation fail. The case is stayed until further order of the court.

Stockholder derivative lawsuits: In Re Advanced Emissions Solutions, Inc. Shareholder Derivative Litigation, No. 2014CV-30709 (District Court, Douglas County, Colorado) (consolidated actions).

Consolidated stockholder derivative claims against certain of the Company's current and former officers and directors, along with the Company as a "nominal defendant" are pending in the District Court for Douglas County, Colorado, and are currently stayed.

In June and July 2014 stockholder derivative actions were filed in the Colorado District Courts for Douglas County and for the City and County of Denver. By agreement of the parties, the case in the Denver District Court was transferred to the Douglas County District Court and the cases were consolidated.

In separate complaints the plaintiffs allege breach of fiduciary duties, waste of corporate assets, and unjust enrichment against the defendants for their allegedly utilizing improper accounting techniques and failing to maintain effective internal controls that together resulted in materially inaccurate financial statements, from which, incentive compensation was derived and paid. Plaintiffs demand, on behalf of the Company, unspecified monetary damages, “appropriate equitable relief,” and the costs and disbursements of the action, including attorneys', accountants and expert fees, costs, expenses, and restitution, as well as certain corporate governance changes.

On August 28, 2014, the Colorado state court approved a Stipulation and proposed Order Consolidating Actions, Appointing Co-Lead Plaintiffs and Co-Lead Counsel, and Staying Consolidated Action. Under that Order the consolidated derivative actions are stayed at least 30 days after a decision by the U.S. District Court on Defendants’ motion to dismiss the operative complaint in the securities class action described above. Any party has the right to move to lift the stay on 30-days’ written notice to the other parties.

SEC Inquiry

On April 7, 2014, the SEC's Division of Enforcement informed the Company that it had initiated an inquiry to determine if violations of the federal securities laws have occurred (the "SEC Inquiry"), and in September 2014 the SEC issued a formal order of investigation. The SEC Inquiry generally pertains to the restatement of the Company's financial statements and internal controls processes, as described in the Explanatory Note and Note 2 of the Consolidated Financial Statements included within Item 8 of the Annual Report on Form 10-K for the fiscal year ended December 31, 2014. The Company is fully cooperating with the SEC and has provided information and documents to the SEC on an ongoing basis. To date, the SEC has not asserted any formal claims. While we cannot predict the duration or outcome of the SEC Inquiry, it could result in the payment of monetary penalties and other relief.

We believe that it is unlikely that the outcome of each of the legal proceedings discussed above will have a material adverse effect on our Company and its subsidiaries as a whole, notwithstanding that the unfavorable resolution of any matter may have a material effect on our net earnings (if any) in any particular quarter. However, we cannot predict with any certainty the final outcome of any legal proceedings as described in the paragraphs above, and there can be no assurance that the ultimate resolution of any such matter will not have a material adverse effect on our consolidated financial position, results of operations, or cash flows.

Item 4. Mine Safety Disclosures

Not applicable.

PART II

Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

The number of shares and per share amounts below have been retroactively restated to reflect the two-for-one stock split of the Company's common stock, which was effected in the form of a common stock dividend distributed on March 14, 2014.

Price Range of Common Stock

As of December 31, 2015, our common stock was quoted on the OTC Pink® Marketplace - Limited Information Tier ("OTC") market under the symbol "ADES". The table below sets forth the price range of our common stock for each quarter of 2015 and 2014:

	2015		2014	
	High	Low	High	Low
1st Quarter	$21.86	$9.40	$27.90	$22.53
2nd Quarter	$17.00	$12.20	$25.89	$18.10
3rd Quarter	$13.00	$6.30	$23.90	$19.33
4th Quarter	$7.14	$3.70	$23.03	$19.24

The Company's common stock traded on the NASDAQ Capital Market ("NASDAQ") under the symbol "ADES" through February 2, 2015. Effective February 3, 2015, NASDAQ suspended trading in our securities. Our securities were officially delisted from the NASDAQ on March 30, 2015.

The OTC quotations above reflect inter-dealer prices, without retail mark-up, markdown or commissions and may not represent actual transactions. Such quotes are not necessarily representative of actual transactions or of the value of the Company's securities.

The trading volume for the Company's common stock is relatively limited. There is no assurance that an active trading market will continue to provide adequate liquidity for the Company's existing stockholders or for persons who may acquire the Company's common stock in the future.

Performance Graph

The following graph and table depict the total return to stockholders for the period beginning on December 31, 2010 and ending on December 31, 2015 relative to the performance of the Russell 3000 Index and a select industry peer group. The graph and table assume $100 invested and that all dividends were reinvested.

The performance graph and table are not intended to be indicative of future performance. The performance graph and table shall not be deemed "soliciting material" or to be "filed" with the Securities and Exchange Commission for purposes of Section 18 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), or otherwise subject to the liabilities under that Section, and shall not be deemed to be incorporated by reference into any of the Company's filings under the Securities Act of 1933, as amended, or the Exchange Act.

The select industry peer group includes the following: American Vanguard Corp., Calgon Carbon Corporation, CECO Environmental Corp., Clean Energy Fuels Corp., EnerNOC, Inc., FutureFuel Corp., Fuel-Tech, Inc., PMFG, Inc., Hawkins Inc., Headwaters Incorporated, KMG Chemicals Inc., Lydall Inc., Flotek Industries, Inc., and Rentech, Inc.

Holders

The number of record holders of our common stock as of April 6, 2016 was approximately 1,051. The approximate number of beneficial stockholders is estimated at 2,246.

Dividends

We have not paid cash dividends since inception. In addition, Energy Capital Partners I, LP and its affiliated funds ("ECP") Settlement Agreement signed in November 2011 restricts our ability to pay dividends without concurrently increasing our letters of credit in an amount equal to 50% of the fair market value of the dividend. Should we pay dividends, the payment of such dividends will be dependent upon earnings, financial condition and other factors considered relevant by our Board and will be subject to limitations imposed under Delaware law. The Credit Agreement signed October 22, 2015 with Franklin Mutual Quest Fund and MFP Investors, LLC as initial lenders also restricts our ability to pay dividends unless specific exceptions are met. We currently have no plan in place to pay cash dividends.

Securities Authorized for Issuance under Equity Compensation Plans

The disclosure required by this Item is included under Item 12 of this Form 10-K.

Purchases of Equity Securities by the Company and Affiliated Purchasers

Neither we nor any “affiliated purchaser,” as defined in SEC Rule 10b-18(a)(3), purchased any of our equity securities during the years ended December 31, 2014 and 2015.

Item 6. Selected Financial Data
FIVE-YEAR SUMMARY OF SELECTED FINANCIAL DATA

The following selected financial data are derived from the audited Consolidated Financial Statements for the years ended December 31, 2015, 2014, 2013 and 2012 and from the unaudited consolidated financial statements of the Company for the year ended December 31, 2011 and should be read in conjunction with Item 1A Risk Factors, Item 7 Management's Discussion and Analysis of Financial Condition and Results of Operations, and our Consolidated Financial Statements and the related notes included in Item 8 Financial Statements and Supplementary Data of this Form 10-K.

	Years Ended December 31,				
(in thousands)	2015	2014	2013	2012	2011
Statement of operations data:	(3) (5)	(3)	(3)	(4)	(unaudited) (5)
Revenues	$62,739	$16,923	$13,286	$16,316	$21,764
Earnings (loss) from equity method investments	8,921	42,712	15,502	813	28,795
Royalties, related party	10,642	6,410	2,505	1,446	—
Net income (loss)	(30,141)	1,387	(15,987)	(13,129)	(30,811)
Earnings (loss), per common share, basic (1) (2)	(1.37)	0.06	(0.78)	(0.65)	(1.91)
Earnings (loss), per common share, diluted	(1.37)	0.06	(0.78)	(0.65)	(1.91)
Dividends declared per common share	—	—	—	—	—

	As of December 31,				
(in thousands)	2015	2014	2013	2012	2011
Balance sheet data:	(3) (5)	(3)	(3)	(4)	(unaudited) (5)
Total assets	$60,775	$93,699	$73,524	$28,885	$42,609
Total debt	28,025	15,910	—	—	—
Stockholders' deficit	(24,978)	(697)	(6,167)	(21,456)	(9,384)

(1) The number of shares and per share amounts have been retroactively restated to reflect the two-for-one stock split of the Company's common stock, which was effected in the form of a common stock dividend distributed on March 14, 2014.

(2) The computation of diluted EPS was the same as basic EPS as the inclusion of outstanding options or unvested equity instruments would have been anti-dilutive for the years ended December 31, 2015, 2013, 2012 and 2011.

(3) On August 31, 2012, BCSI acquired and consolidated the assets of two related private companies engaged in the DSI business, as described in Note 9 of the Company's Annual Report on Form 10-K for the year ended December 31, 2014. The fabrication facility related to this acquisition was shut down during the fourth quarter of 2015 as described in Note 2 of the Consolidated Financial Statements within this Form 10-K.

(4) As described in Item 7 and Note 14 of the Company's Annual Report on Form 10-K for the year ended December 31, 2014, during 2011, the Company entered into settlement agreements with various third parties related to litigation regarding one of the Company’s equity method investments, whereby the Company paid a lump-sum payment totaling $33 million in the third quarter of 2011. In addition, the Company agreed to pay an additional $7.5 million over a three-year period with payments commencing in the second quarter of 2012, payable in three equal installments. The Company also relinquished its investment in the equity method entity and was also required to pay additional damages in the form of future royalty payments related to certain future revenues generated from the equity method investment through the second quarter of 2018 (the “Royalty Award”). Included within the Restated selected financial data, the Company has recognized the expense related to the entire settlement agreements, offset by a gain on relinquishment of its investment in the equity method entity, resulting in net expenses of $48.3 million during the year ended December 31, 2011.
Additionally, as of and during the year ended December 31, 2011, the Company recognized equity method losses, from the equity method investment discussed above of $8.8 million. This investment was relinquished in 2011 and thus had no impact to the years ended subsequent to December 31, 2011.
(5) As described in Note 7 of the Consolidated Financial Statements within this Form 10-K, on February 10, 2014, the Company purchased a 24.95% membership interest in RCM6, LLC ("RCM6"), which owns a single RC facility that produces RC that qualifies for IRC Section 45 tax credits, from CCS through an up-front payment of $2.4 million and an initial note payable to CCS of $13.3 million. During the year ended December 31, 2015, the Company recognized equity method losses related to RCM6 of $4.6 million. On March 3, 2016, the Company sold its 24.95% membership interest in RCM6 for a cash payment of $1.8 million and assumption of the outstanding note payable made by the Company in connection with its purchase of RCM6 membership interests from CCS in February 2014.

The Notes to the Consolidated Financial Statements contain additional information about charges resulting from other operating expenses and other income (expense) which affects the comparability of information presented.
QUARTERLY FINANCIAL DATA – UNAUDITED

(in thousands, except per share data)	For the Quarter Ended December 31, 2015	September 30, 2015	June 30, 2015	March 31, 2015
Revenues	$13,202	$ 12,885	$14,895	$21,757
Cost of revenues, exclusive of operating expenses shown below	7,224	10,610	14,003	15,715
Other operating expenses	13,113	12,264	18,670	12,940
Operating loss	(7,135)	(9,989)	(17,778)	(6,898)
Earnings (loss) from equity method investments	3,788	(41)	4,860	314
Royalties, related party	2,876	3,273	2,299	2,194
Other income (expenses), net	(2,568)	(1,853)	(1,765)	(1,698)
Income (loss) before income tax expense	(3,039)	(8,610)	(12,384)	(6,088)
Income tax expense	(131)	44	63	44
Net income (loss)	$(2,908)	$ (8,654)	$(12,447)	$(6,132)
Earnings (loss) per common share – basic	$(0.13)	$ (0.40)	$(0.57)	$(0.28)
Earnings (loss) per common share – diluted	$(0.13)	$ (0.40)	$(0.57)	$(0.28)
Weighted-average number of common shares outstanding (1)				
Basic	21,676	21,687	21,715	21,696
Diluted	21,676	21,687	21,715	21,696

(1) The number of shares and per share amounts have been retroactively restated to reflect the two-for-one stock split of the Company’s common stock, which was effected in the form of a common stock dividend distributed on March 14, 2014.

(in thousands, except per share data)	For the Quarter Ended December 31, 2014	September 30, 2014	June 30, 2014	March 31, 2014
Revenues	$3,693	$9,072	$3,175	$983
Cost of revenues, exclusive of operating expenses shown below	2,903	6,512	1,754	451
Other operating expenses	16,335	12,839	9,841	8,102
Operating income (Loss)	(15,545)	(10,279)	(8,420)	(7,570)
Earnings from equity method investments	20,693	5,603	9,791	6,625
Royalties, related party	2,154	2,275	849	1,132
Other income (expenses), net	(2,484)	(1,185)	(1,199)	(757)
Income (loss) before income tax expense	4,818	(3,586)	1,021	(570)
Income tax expense	141	113	29	13
Net income (loss)	$4,677	$(3,699)	$992	$(583)
Earnings (loss) per common share – basic	$0.21	$(0.17)	$0.05	$(0.03)
Earnings (loss) per common share – diluted	$0.21	$(0.17)	$0.05	$(0.03)
Weighted-average number of common shares outstanding (1)				
Basic	21,563	21,536	21,477	21,465
Diluted	21,947	21,536	22,035	21,465

(1) The number of shares and per share amounts have been retroactively restated to reflect the two-for-one stock split of the Company’s common stock, which was effected in the form of a common stock dividend distributed on March 14, 2014.

Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations.

Overview

This Form 10-K for the year ended December 31, 2015 is filed by Advanced Emissions Solutions, Inc. together with its consolidated subsidiaries (collectively, “ADES”, the “Company”, “we”, “us”, or “our” unless the context indicates otherwis
Pursuant to an Agreement and Plan of Merger, Advanced Emissions Solutions, Inc., a Delaware company incorporated in 2011, replaced ADA-ES, Inc. (“ADA”) as the publicly-held corporation effective July 1, 2013. Therefore, the terms “we”, “us” and “our” means ADA and its consolidated subsidiaries unless the context indicates otherwise, for the periods through and including the period ended June 30, 2013. For further information on the reorganization, see Note 20 of the Notes to Consolidated Financial Statements included in Part II of this Form 10-K.

The Company is a leader in clean coal technologies and associated specialty chemicals, primarily serving the coal-fueled power plant industry. Our proprietary environmental technologies and specialty chemicals enable power and coal-fired plants to enhance existing air pollution control equipment, minimize mercury, CO_2 and other emissions, maximize capacity, and improve operating efficiencies, to meet the challenges of existing and pending emission control regulations. See further discussion of the Company's business within Item 1 of this Form 10-K. Discussion regarding segment information is included within the discussion of our consolidated results. Additionally, discussion related to our reportable segments is included within Item 1 of this Form 10-K and Note 17 of our Consolidated Financial Statements. Because of changes we have made in our business since the end of 2015, the information relating to our business and related matters includes certain information for periods after December 31, 2015.

Components of Revenue, Expenses and Equity Method Investees

The following briefly describes the components of revenue and expenses as presented in the Consolidated Statement of Operations. Descriptions of the revenue recognition policies are included in Note 1 to the Company's Consolidated Financial Statements.

Revenue and costs of revenue

Equipment sales

Equipment sales represent the sale of activated carbon injection ("ACI") systems to control mercury, dry sorbent injection ("DSI") systems to control SO_2, SO_3, and HCl and electrostatic precipitator ("ESP") liquid flue gas conditioning systems. Revenue from extended equipment contracts is recorded using the completed contract method of accounting.

The Company also enters into other non-extended equipment contracts for which the Company recognizes revenues on time and material contracts as services to build equipment systems are performed or as equipment is delivered.

Consulting services

Consulting services are provided to assist electric power generators and others in planning and implementing strategies to meet the new and increasingly stringent government emission standards requiring reductions in SO_2, NO_x, particulates, acid gases and mercury. This includes demonstrations of our commercial products.

Chemicals and other

The Company sells proprietary chemical blends to coal-fired utilities that allow the respective utilities to comply with the regulatory emissions standards.

Other Operating Expenses

Payroll and benefits

Payroll and benefits costs include personnel related fringe benefits, sales and administrative staff labor costs and stock compensation expenses.

Rent and occupancy

Rent and occupancy costs include rent, insurance, and other occupancy-related expenses.

Legal and professional fees
Legal and professional costs include external legal, audit and consulting expenses.

General and administrative
General and administrative costs include director fees and expenses, bad debt expense and other general costs of conducting business.

Research and development, net
Research and development expense consists of research relating to various projects including the CO_2 capture and control market. The Company enters into contracts with the DOE. These contracts are best-effort-basis contracts and the Company may include industry cost-share partners to offset the costs incurred that are anticipated to be in excess of funded amounts from the DOE. The Company recognizes amounts funded by the DOE and industry partners under research-and-development-cost-sharing arrangements as an offset to the Company's aggregate research and development expenses within the Research and development, net line in the Consolidated Statements of Operations.

Depreciation and amortization
Depreciation and amortization expense consists of depreciation expense related to property and equipment and the amortization of long lived intangibles.

Other Income (Expense), net

Earnings from equity method investments
Earnings from equity method investments relates to the Company's share of earnings and losses related to its equity method investments.
The Company's equity method earnings in CCS are positively impacted when CCS obtains an investor in a RC facility and receives lease payments from the lessor of the RC facility. If CCS operates a retained RC facility, the Company's equity method earnings will be negatively impacted as operating retained RC facilities generate operating losses. However, the Company benefits if it is able to utilize net operating losses and tax credits associated with those losses due to the Company's share of ownership in CCS. These benefits, if utilized, are reported within the Income tax expense line item in the Consolidated Statements of Operations. As of December 31, 2015, we have not been able to utilize tax assets and credits from the production of RC due to our operating losses. The Company's equity method earnings in CCS are negatively impacted due to an annual preferred return to which one of the equity owners is entitled. Therefore, the equity earnings available to the common members of CCS net income (loss) are equal to CCS's net income less the preferred return due to the equity holder.
RCM6 owns a single RC facility that the Company owned 24.95% of and is managed by CCS, whose economics to the Company are consistent with an invested facility discussed above except that the Company was subject to funding its share of operating losses during 2014 and 2015. The purchase of RCM6 resulted in the Company recording a basis difference related to fixed assets and identifiable intangible assets. The difference between the Company's proportionate share of RCM6's net loss and the Company's equity losses relates to the depreciation and amortization expense recorded by the Company related to the basis difference. The Company sold its entire ownership interest in RCM6 in the first quarter of 2016.

CCSS operates and maintains RC facilities under operating and maintenance agreements. CCS or the lessee of the RC facilities pays CCSS, subject to certain limitations, the costs of operating and maintaining the RC facilities. CCSS also arranges for the purchase and delivery of certain chemical additives necessary for the production of refined coal under chemical agency agreements. The terms of the chemical agency agreements run concurrent with the RC facilities leases. CCSS is also the primary beneficiary of certain RC facilities that are VIE's and therefore consolidates such RC facilities. All net income (loss) associated with these consolidated RC facilities is allocated to the noncontrolling shareholders and therefore does not impact our equity earnings (loss) from CCSS.

Royalties, related party
The Company generates royalties from licensing its M-45™ and M-45-PC™ emission control technologies to CCS. Royalties are earned based upon (i) a percentage of the per-ton, pre-tax margin of RC produced with the M-45 License

that produces a valid and verifiable Section 45 Tax Credit, net of certain allocable operating expenses, (ii) a percentage of the Section 45 tax credits claimed, and not invested by a licensee, sublicensee, or licensee affiliate using the M-45 License, net of certain allocable operating expenses and (iii) a percentage of the revenue, net of all direct expenses, received by CCS as a direct result of CCS's exercise of the M-45 License.

Other income (expense), net
The remaining components of other income (expense), net include interest income, interest expense and other miscellaneous items.

The Company records interest expense due to the Company's share of CCS equity method earnings for RC facility leases which are treated as installment sales for tax purposes. IRS section 453A requires taxpayers using the installment method to pay an interest charge on the portion of the tax liability that was deferred under the installment method. We refer to this as 453A interest ("453A interest").

Results of Operations
For comparability purposes, the following tables set forth our results of operations for the periods presented in our annual financial statements included elsewhere in this Form 10-K. The period-to-period comparison of financial results is not necessarily indicative of financial results that may be achieved in future periods.

Year ended December 31, 2015 vs. Year ended December 31, 2014

Our consolidated results comprised the following:

	Years Ended December 31,		Change	
(in thousands, except per share data)	2015	2014	($)	(%)
Revenues:				
Equipment sales	$60,099	$12,044	$48,055	399 %
Consulting services	1,752	4,488	(2,736)	(61)%
Chemicals and other	888	391	497	127 %
Total revenues	62,739	16,923	45,816	271 %
Operating expenses:				
Equipment sales cost of revenue, exclusive of depreciation and amortization	45,433	9,277	36,156	390 %
Consulting services cost of revenue, exclusive of depreciation and amortization	1,518	2,203	(685)	(31)%
Chemical and other cost of revenue, exclusive of depreciation and amortization	601	140	461	329 %
Payroll and benefits	23,589	20,767	2,822	14 %
Rent and occupancy	3,309	2,468	841	34 %
Legal and professional fees	16,604	14,430	2,174	15 %
General and administrative	6,104	6,066	38	1 %
Research and development, net	5,362	1,521	3,841	253 %
Depreciation and amortization	2,019	1,865	154	8 %
Total operating expenses	104,539	58,737	45,802	78 %
Operating loss	(41,800)	(41,814)	14	— %
Other income (expense):				
Earnings from equity method investments	8,921	42,712	(33,791)	(79)%
Royalties, related party	10,642	6,410	4,232	66 %
Interest income	24	74	(50)	(68)%
Interest expense	(8,402)	(5,725)	(2,677)	47 %
Other	494	26	468	1,800 %
Total other income (expense), net	11,679	43,497	(31,818)	(73)%
Income (loss) before income tax expense	(30,121)	1,683	(31,804)	(1,890)%
Income tax expense	20	296	(276)	(93)%
Net income (loss)	$(30,141)	$1,387	$(31,528)	(2,273)%
Earnings (loss) per common share:				
Basic	$(1.37)	$0.06	$(1.43)	(2,383)%
Diluted	$(1.37)	$0.06	$(1.43)	(2,383)%
Weighted-average number of common shares outstanding:				
Basic	21,773	21,554		
Diluted	21,773	22,079		

Total Revenue and Cost of Revenue

A summary of the components of our revenue and costs of revenue for the years ended December 31, 2015 and 2014 is as follows:

	Years Ended December 31,		Change	
(Amounts in thousands except percentages)	2015	2014	($)	(%)
Revenues:				
Equipment sales	$60,099	$12,044	$48,055	399 %
Consulting services	1,752	4,488	(2,736)	(61)%
Chemicals and other	888	391	497	127 %
Total revenues	62,739	16,923	45,816	271 %
Operating expenses:				
Equipment sales cost of revenue, exclusive of depreciation and amortization	45,433	9,277	36,156	390 %
Consulting services cost of revenue, exclusive of depreciation and amortization	1,518	2,203	(685)	(31)%
Chemical and other cost of revenue, exclusive of depreciation and amortization	601	140	461	329 %

Equipment sales and Equipment sales cost of revenue

During the years ended December 31, 2015 and 2014, we entered into four and 25 long term (6 months or longer) fixed price contracts to supply ACI systems with aggregate contract values including change orders of $5.5 million and $35.8 million, respectively. The total value per contract may change due to the relative sizes of ACI systems and the contracts related thereto. During the years ended December 31, 2015 and 2014, we completed 32 and 15 ACI systems, recognizing revenues of $51.7 million and $11.1 million and costs of revenue of $38.4 million and $8.1 million, respectively. We recognized $0.1 million and zero in loss provisions related to contracts in 2015 and 2014 related to ACI systems.

During the years ended December 31, 2015 and 2014, we entered into one and 13 long term (6 months or longer) fixed price contracts to supply DSI systems and other material handling equipment with contract values including associated change orders of $2.4 million and $10.9 million, respectively. Total value per contract may change due to the relative sizes of DSI systems the contracts related thereto. During the years ended December 31, 2015 and 2014, we completed seven and two DSI systems and two and five other material handling equipment systems, recognizing revenues of $7.2 million and $0.6 million and costs of revenue of $5.9 million and $0.8 million, respectively. Due to potential cost overruns related to certain DSI projects, we expect that the future relationship between revenues and costs may be dissimilar from prior results. Certain of the DSI system long-term fixed price contracts were expected to be completed with losses. As a result, cost of sales included $0.2 million and $0.3 million in loss provisions related to contracts recognized in 2015 and 2014, respectively, related to DSI system contracts.

The remaining changes were due to other equipment sales.

Due to the timing impacts of using the completed contract method of revenue recognition, our revenue and backlog information may not be comparable to the information of our competitors, which do not use the completed contract method. For example, due to the lengthy revenue recognition period we may recognize less revenue during a particular period, but have more backlog. Refer to the calculation of our backlog, included in Item 1 of this Form 10-K filing, to obtain an understanding of future amounts that may be recognized in revenue.

Demand for ACI and DSI system contracts during 2013, 2014, and 2015 has been driven by coal fired power plant utilities that need to comply with MATS and MACT standards by 2015. Changes in revenues related to ACI and DSI system contracts fluctuate due to changes in the number of contracts entered into as well as the long-lead time requirements for manufacturing, installation and testing of the equipment and ultimately the timing of revenue being recognized, which is based on substantial completion of the contracts. Sales of ACI and DSI equipment continued to decrease in 2015 as the respective utilities will have needed to comply with the MATS and MACT standards as of that date. However, we also believe that a portion of the ACI and DSI system decrease may be offset beginning in 2016 by new equipment product offerings and new industrial customers that did not exist or were not material as of December 31, 2015 and through the date of these financial statements.

Consulting services and Consulting services cost of revenue

We provided consulting services related to emissions regulations. Revenues decreased year over year due to a decrease in average contract revenue, driven by smaller scale consulting contracts with new customers in 2015 and the Company's reduction in force of personnel providing consulting services.

Chemicals and other and Chemical and other cost of revenue

During the years ended December 31, 2015 and 2014, the most significant component of Chemicals and other revenues and costs of revenues were chemical sales related to emissions control technologies. Revenues increased year over year due to an increase in average contract revenue. The increase in revenue is also due to the Company's increased focus on selling these products to coal-fired power plants to be in compliance with applicable regulations. We believe revenues will continue to increase in 2016 with continued focus on this market and providing chemical solutions to potential new customers.

Additional information related to revenue concentrations and contributions by class and reportable segment can be found within the segment discussion below and in Note 18 to the Company's Consolidated Financial Statements.

Other Operating Expenses

A summary of the remaining components of our operating expenses for the years ended December 31, 2015 and 2014 is as follows:

	Years Ended December 31,		Change	
(in thousands, except percentages)	2015	2014	($)	(%)
Operating expenses:				
Payroll and benefits	$23,589	$20,767	$2,822	14 %
Rent and occupancy	3,309	2,468	841	34 %
Legal and professional fees	16,604	14,430	2,174	15 %
General and administrative	6,104	6,066	38	1 %
Research and development, net	5,362	1,521	3,841	253 %
Depreciation and amortization	2,019	1,865	154	8 %
	$56,987	$47,117	$9,870	21 %

Payroll and benefits

Payroll and benefits expenses increased in 2015 compared to 2014 due to an increase in restructuring expenses, including the modification and acceleration of equity awards during 2015 in connection with the departure of certain executive officers and management's alignment of the business with strategic objectives. Restructuring expenses recorded during 2015 were $8.5 million compared to $3.5 million in 2014, of which $3.4 million was due to the accelerated vesting of modified equity-based compensation awards for certain terminated employees. Incentive compensation in 2015 compared to 2014 also increased by $0.6 million due to bonuses awarded during the year. These increases are offset by a decrease in overall and executive head count by approximately 30% related to the reduction in force and management's realignment of the business. We expect to record additional charges in 2016 associated with these events. Additionally, as discussed in Note 22 to the Company's Consolidated Financial Statements, the Company undertook an additional reduction in force in the second quarter of 2016.

Rent and occupancy

Rent and occupancy expenses increased in 2015 compared to 2014 primarily due to $0.8 million in lease termination costs incurred in 2015 associated with the facility closure located in McKeesport, PA and an increase in insurance expense. These increases were partially offset by the Company terminating a lease relating to warehouse space in the third quarter of 2015 resulting in a $0.1 million reduction of expense. Subsequent to December 31, 2015, and in connection with the aforementioned realignment of the Company's operations, the Company entered into an agreement to terminate various lease agreements covering approximately 207 thousand square feet of manufacturing, warehouse and office space located in Pennsylvania. As consideration for terminating the leases, the Company agreed to pay the lessor termination fees of $0.3 million in April 2016 and the same amount in April 2017. As a result, future minimum commitments under leases and annual rent expense will be reduced by approximately $0.4 million and $0.2 million for the years ended December 31, 2016 and 2017, respectively.

Legal and professional fees
Legal and professional fees expenses increased by $2.2 million in 2015 compared to 2014 as a result of the significant professional resources deployed to address the Restatement of our consolidated financial statements included in our Annual Report on Form 10-K for the fiscal year ended December 31, 2014, including the ongoing SEC Inquiry, which individually increased expenses by $3.3 million, resulting in total 2015 Restatement expenses of $9.5 million. Other increases related to legal fees of $0.8 million, and consulting fees of approximately $2.7 million most significantly related to strategic advisory services and information technology services. These increases were offset by $3.7 million decrease in professional fees for a residual payment agreement with a former consultant who was involved in the development and deployment of RC technologies and expenses related to the termination of the consulting agreement with the former owner of the DSI equipment assets acquired by BCSI ("DSI Business Owner") as described in Note 9 of the Consolidated Financial Statements. The remaining decrease of $0.9 million was due to decreases in various professional fees during 2015 compared to 2014. During February 2016, the Company entered into an agreement with the DSI Business Owner to settle the remaining amounts owed as of the date of the agreement of approximately $1.1 million for $0.3 million.

General and administrative
General and administrative expenses increased in 2015 compared to 2014 primarily due to modest increases in general operating expenses. We expect the general and administrative expenses in 2016 to remain consistent with expenses in 2015.

Research and development, net
Research and development expense increased in 2015 compared to 2014 mostly due to our investment in ADA Analytics. We recorded gross R&D expenses of $6.7 million and $3.6 million in 2015 and 2014, respectively, offset by reimbursements received from the DOE and industry cost share partners of $1.4 million and $2.0 million, respectively. We incurred expenses related to our investment in ADA Analytics of $2.6 million, of which $1.9 million related to the impairment charge we recognized in the third quarter of 2015. Additionally, we incurred $1.2 million related to a liquefied natural gas project that the Company was helping fund during 2015, which has subsequently been terminated. Due to changes related to management's alignment of the business with strategic objectives during 2015, we plan to cease on non-essential research and development activities and expect that future research and development expenses will be significantly less that historical expenses.

Depreciation and amortization
Depreciation and amortization expense increased in 2015 compared to 2014 due to amortization of the Highview technology license and asset additions.

Other Income (Expense), net
A summary of the components of our other income (expenses), net for the years ended December 31, 2015 and 2014 is as follows:

	Years Ended December 31,		Change	
(Amounts in thousands, except percentages)	2015	2014	($)	(%)
Other income (expense):				
Earnings from equity method investments	$8,921	$42,712	$(33,791)	(79)%
Royalties, related party	10,642	6,410	4,232	66 %
Interest income	24	74	(50)	(68)%
Interest expense	(8,402)	(5,725)	(2,677)	47 %
Other	494	26	468	1,800 %
Total other income (expense), net	$11,679	$43,497	$(31,818)	(73)%

Earnings in equity method investments

The following table presents the equity method earnings, by investee, recognized by the Company:

	Year ended December 31,		Change	
(in thousands)	2015	2014	($)	(%)
Earnings from CCS	$8,651	$43,584	$(34,933)	(80)%
Earnings from CCSS	4,838	3,625	1,213	33 %
Loss from RCM6	(4,568)	(4,497)	(71)	2 %
Earnings from equity method investments	$8,921	$42,712	$(33,791)	(79)%

Earnings from equity method investments decreased in 2015 compared to 2014 primarily due to decreases in cash distributions from CCS. The weighted-average number of invested RC facilities, based upon the number of months each facility was invested during the respective years, increased year over year. The number of invested RC facilities that were generating rental income as of December 31, 2015 and 2014, were 12 and 12, respectively. The weighted-average number of retained RC facilities, based upon the number of months each facility was retained during the respective years, increased year over year. However, the number of retained RC facilities that were generating PTCs and other tax benefits as of December 31, 2015 and 2014, were two and five, respectively. During the fourth quarter of 2015, CCS suspended full-time operation of three retained facilities while it awaits final commitments for the purchase or lease of such facilities by tax equity investors.

We recognized $8.7 million and $43.6 million of equity income from CCS for the years ended December 2015 and 2014, compared to our proportionate share of CCS' net income of $35.3 million and $26.6 million, respectively. The difference between our pro-rata share of CCS's net income (loss) and our earnings from our CCS equity method investment as reported on our Consolidated Statements of Operations relates to the Company receiving cumulative distributions in excess of our share of cumulative CCS earnings, and therefore recognizing such excess distributions as equity method earnings in the period the distributions occur. As was the case in 2015, when CCS subsequently reports net income, we will only recognize income to the extent of cash distributions, until such time as the cumulative amount of earnings equals the cumulative amount of distributions; thereafter, we will recognize our proportionate share of net income (loss). The following table presents the Company's investment balance, equity earnings, cash distributions received and cash distributions in excess of the investment balance for the years ended December 31, 2015 and 2014 (in thousands).

Description	Date(s)	Investment balance	ADES equity earnings (loss)	Cash distributions	Memo Account: Cash distributions and equity loss in (excess) of investment balance
Total investment balance, equity earnings (loss) and cash distributions	12/31/2013	$ —	$13,813	$ 13,813	$ (12,906)
ADES proportionate share of income from CCS (1)	2014 activity	26,613	26,613	—	—
Recovery of cash distributions in excess of investment balance (prior to cash distributions)	2014 activity	(12,906)	(12,906)	—	12,906
Current year cash distributions from CCS	2014 activity	(43,584)	—	43,584	—
Adjustment for current year cash distributions in excess of investment balance	2014 activity	29,877	29,877	—	(29,877)

Total investment balance, equity earnings (loss) and cash distributions	12/31/2014	—	43,584	43,584	(29,877)
ADES proportionate share of income from CCS (1)	2015 activity	35,265	35,265	—	—
Recovery of cash distributions in excess of investment balance (prior to cash distributions)	2015 activity	(29,877)	(29,877)	—	29,877
Current year cash distributions from CCS	2015 activity	(8,651)	—	8,651	—
Adjustment for current year cash distributions in excess of investment balance	2015 activity	3,263	3,263	—	(3,263)
Total investment balance, equity earnings and cash distributions	12/31/2015	$ —	$ 8,651	$ 8,651	$ (3,263)

(1) The amounts of the Company's 42.5% proportionate share of net income as shown in the table above differ from mathematical calculations of the Company’s 42.5% equity interest in CCS multiplied by the amounts of Net Income available

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to Class A members as shown in the table above of CCS results of operations due to adjustments related to the Redeemable Class B preferred return and the elimination of CCS earnings attributable to RCM6, of which the Company owned 24.95% during the years ended December 31, 2015 and 2014.

CCS distributed $8.7 million in cash during 2015 that we recognized as equity method earnings, compared to distributions and earnings of $43.6 million during 2014. As of December 31, 2015, our cumulative distributions exceed our proportionate share of cumulative CCS earnings by approximately $3.3 million. As such, we will continue to recognize future distributions received from CCS as equity method earnings until such a time as cumulative earnings equal or exceed cumulative distributions. Thereafter, we will recognize our proportionate share of CCS' earnings (losses) in each period, so long as distributions received in such period do not exceed our proportionate share of CCS' earnings (losses) for the period. We expect an increase in equity method earnings in 2016 due to expected increases in cash distributions from CCS.

While CCS recognized $87.3 million in earnings allocable to Class A shareholders during 2015, of which our proportionate share totaled approximately $35.3 million, CCS's distributions were severely limited and restricted primarily by capital expenditures, changes in working capital items, and other requirements for cash to be retained within the business. The CCS consolidated financial statements as of December 31, 2015 and 2014, and for the years ended December 31, 2015, 2014 and 2013, are included within Item 15 of this Form 10-K. As compared to distributions received in 2014, CCS distributions in 2015 were also limited by a reduction in the number of closings of sales or leases of qualified facilities to new tax equity investors, which closing generally include upfront purchase price payments that have historically been immediately distributed to the equity owners of CCS, including us. A substantial portion of the 2014 distributions received from CCS were due to such upfront purchases price or lease payments that were received by CCS as a result of closings of sales or leases of qualified facilities to new tax equity investors.

Equity earnings from our interest in CCSS increased by $1.2 million in 2015 as compared to 2014, primarily due to an increase in the number of RC facilities being operated by CCSS throughout the year. The weighted-average number of RC facilities for which CCSS had operating and maintenance agreements in place, based upon the number of months each facility was operated during the respective years, increased year over year. As of December 31, 2015 and 2014, CCSS had operating and maintenance agreements with 14 and 17 RC facilities, respectively. CCSS derives earnings both from fixed-fee arrangements as well as fees that are tied to actual RC production, depending upon the specific RC facility operating and maintenance agreement.

During February 2014, we purchased a membership interest in RCM6 and recognized equity method losses resulting from the operation of the RC facility owned by RCM6, which generated tax credits and tax benefits available to the Company. On March 3, 2016, the Company sold its entire ownership interest in RCM6. The Company received a cash payment of $1.8 million related to the sale and has no future obligations related to previously recorded notes payable. However, the Company will still be positively impacted by the RCM6 RC facility in that it will receive it pro-rata share of future income and cash distributions through its ownership in CCS. The future income and cash distribution will be generated from the RCM6 RC facility lease payments made to CCS.

Although all of our deferred tax assets have a full valuation allowance recorded against them as of December 31, 2015 and 2014, we earned the following tax credits which may be available for future benefit related to the operation of retained RC facilities:

	Years Ended December 31,	
(in thousands)	2015	2014
IRC Section 45 tax credits earned	$38,998	$25,817

As discussed in Item 1, CCS operates and leases or sells facilities used in the production of RC to third party tax equity investors. All dispositions of such facilities are treated as sales for federal income tax purposes at CCS. The resulting gain from these sales is reported by CCS pursuant to the installment method under IRC Section 453. As of December 31, 2015, ADA’s allocable share of the gross deferred installment gain from CCS to be recognized in future years is approximately $336 million.

Due to the operation of retained RC facilities, CCS has generated PTCs under IRC Section 45 and IRC Section 38. These Section 45 and Section 38 tax credits qualify as General Business Credits ("GBC"). These GBC's are allocated to the owners of CCS, including the Company, who may benefit to the extent that the GBC's are realized from the operation of retained RC facilities. As of December 31, 2015, we had approximately $97 million in GBC carryforward and $59 million of federal net operating loss ("NOL") carryforwards, all of which had a valuation allowance recorded against them. Unused NOL's and GBC's may be carried forward 20 years from the tax year in which they are generated.

In the hypothetical event of an ownership change, as defined by IRC Section 382, utilization of the NOL's and tax credits generated prior to the change would be subject to an annual limitation imposed by IRC Section 382 for NOL's and Section 383 for tax credits. The results of a recent analysis indicated that we had not experienced an ownership change as of December 31, 2015. Such analysis for the period from January 1, 2016 through the date of this filing has not been completed. Therefore, it is possible that we experienced an ownership change between January 1, 2016 and the date of this filing, thus subjecting our NOL and GBC carryforwards to limitation. Should a limitation exist, however, we would likely be in a position to substantially increase the limitation by virtue of our approximately $336 million deferred installment sale gain at CCS.

Specifically, IRC Section 382 provides that a corporation with a net unrealized built-in gain ("NUBIG") immediately before an ownership change may increase its limitation by the amount of recognized built-in gain ("RBIG") arising from the sale of a built-in gain asset during a recognition period, which is generally the five year period immediately following an ownership change. Built-in gain reported on the installment sale method that is attributable to assets sold by the corporation before or during the recognition period may increase the corporation's limitation during and after the recognition period. Therefore, it is likely that any IRC Section 382 limitation imposed at ADES upon an ownership change may be increased by our share of RBIG from CCS's installment sale gain attributable to RC facilities sold before or during the period in which the change in ownership occurred.

There are numerous assumptions that must be considered in calculating the RBIG at CCS and the increase to our IRC Section 382 limitation. Assuming the following, the Company may be able to increase the total limitation by approximately $336 million over the duration of the installment sale.

- The CCS RBIG is a result of the sale of RC facilities by CCS and its election to utilize installment sale for tax purposes;
- Investors in RC facilities will not terminate existing contracts as completion of installment sale transaction is necessary to realize RBIG;
- We have no net unrealized built-in loss to offset the NUBIG from CCS;
- Our RBIG is equal to the deferred gain allocated from CCS or, approximately $336 million;
- We will have a NUBIG immediately before a hypothetical ownership change such that the CCS RBIG is available to increase the IRC Section 382 limitation;
- We will continue our historic business operations for at least two years following a hypothetical ownership change; and
- A second ownership change does not occur.

The annual limitation will be increased by the amount of RBIG that is included in taxable income each year.

Additional information related to equity method investments can be found in Note 7 to the Company's Consolidated Financial Statements.

Royalties, related party

As of December 31, 2015 and 2014, RC was produced at seven and six RC facilities, respectively, using M-45™ and M-45-PC™ technologies, which CCS licenses from us. This includes the impact of CCS ceasing full-time operation of three retained facilities during the fourth quarter of 2015 while it awaits final commitments for the purchase or lease of such facilities by tax equity investors. During the years ended December 31, 2015 and 2014, there was 22.0 million tons and 12.4 million tons of RC produced at those facilities, respectively, which resulted in a 66% increase in our income from Royalties, related party. Certain of the facilities that were operating in 2015 were retained facilities that were producing tax credits and other tax benefits directly for the benefit of CCS and its owners. Effective in the fourth quarter of 2015, some of these facilities were idled pending the sale or lease to tax equity investors. As a result, we anticipate that 2016 royalties will decline to approximately the level of 2014 until such time as tax equity investors are secured and production from these facilities resumes.

Interest expense
Interest expense increased in 2015 compared to 2014 by $1.3 million due to the increase in RC facilities on which CCS recognized installment sales for tax purposes from 11 to 12 and an increase in the interest rate. IRC section 453A requires taxpayers using the installment method to pay an interest charge on the portion of the tax liability that was deferred under the installment method. The following table shows the balance of the tax liability that has been deferred and the applicable interest rate to calculate section 453A interest:

	As of December 31,	
(in thousands)	2015	2014
Tax liability deferred on installment sales (1)	$111,905	$120,129
Interest rate	4.00 %	3.00 %

(1) Represents the approximate tax effected liability related to the deferred gain on installment sales (approximately $336 million as of December 31, 2015).

Additionally, interest expense increased by $0.2 million and $1.2 million related to the note payable used to finance our purchase of RCM6 in February 2014 and the short-term loan entered into in the fourth quarter of 2015, respectively.

During the first quarter of 2016, the Company sold its entire ownership interest in RCM6 and has no future obligations related to previously recorded note payable.

Income tax expense

We did not recognize any federal income tax expense (benefit) during the years ended December 31, 2015 or 2014 as a result of recording full valuation allowances against all of our net deferred tax assets in all jurisdictions. However, we did recognize state income tax expense for the years ended December 31, 2015 and 2014 of zero and $0.3 million, respectively. See Note 16 in our Consolidated Financial Statements for additional information.

Year ended December 31, 2014 vs. Year ended December 31, 2013

Our consolidated results comprised the following:

(in thousands, except per share data)	Years Ended December 31, 2014	2013	Change ($)	(%)
Revenues:				
Equipment sales	$12,044	$5,747	$6,297	110 %
Consulting services	4,488	6,790	(2,302)	(34)%
Chemicals and other	391	749	(358)	(48)%
Total revenues	16,923	13,286	3,637	27 %
Operating expenses:				
Equipment sales cost of revenue, exclusive of depreciation and amortization	9,277	9,459	(182)	(2)%
Consulting services cost of revenue, exclusive of depreciation and amortization	2,203	3,827	(1,624)	(42)%
Chemical and other cost of revenue, exclusive of depreciation and amortization	140	382	(242)	(63)%
Payroll and benefits	20,767	16,228	4,539	28 %
Rent and occupancy	2,468	2,128	340	16 %
Legal and professional fees	14,430	4,534	9,896	218 %
General and administrative	6,066	4,101	1,965	48 %
Research and development, net	1,521	3,237	(1,716)	(53)%
Depreciation and amortization	1,865	1,648	217	13 %
Total operating expenses	58,737	45,544	13,193	29 %
Operating loss	(41,814)	(32,258)	(9,556)	30 %
Other income (expense):				
Earnings from equity method investments	42,712	15,502	27,210	176 %
Royalties, related party	6,410	2,505	3,905	156 %
Interest income	74	109	(35)	(32)%
Interest expense	(5,725)	(1,338)	(4,387)	328 %
Other	26	(44)	70	(159)%
Total other income (expense), net	43,497	16,734	26,763	160 %
Income (loss) before income tax expense	1,683	(15,524)	17,207	(111)%
Income tax expense	296	463	(167)	(36)%
Net income (loss)	$1,387	$(15,987)	$17,374	(109)%
Earnings (loss) per common share:				
Basic	$0.06	$(0.78)	$0.84	(108)%
Diluted	$0.06	$(0.78)	$0.84	(108)%
Weighted-average number of common shares outstanding:				
Basic	21,554	20,103		
Diluted	22,079	20,103		

Total Revenue

A summary of the components of our revenue and costs of revenue for the years ended December 31, 2014 and 2013 is as follows:

	Years Ended December 31,		Change	
(in thousands except percentages)	2014	2013	($)	(%)
Revenues:				
Equipment sales	$12,044	$5,747	$6,297	110 %
Consulting services	4,488	6,790	(2,302)	(34)%
Chemicals and other	391	749	(358)	(48)%
Total revenues	16,923	13,286	3,637	27 %
Operating expenses:				
Equipment sales cost of revenue, exclusive of depreciation and amortization	9,277	9,459	(182)	(2)%
Consulting services cost of revenue, exclusive of depreciation and amortization	2,203	3,827	(1,624)	(42)%
Chemical and other cost of revenue, exclusive of depreciation and amortization	140	382	(242)	(63)%

Equipment sales and Equipment sales cost of revenue

During the years ended December 31, 2014 and 2013, we entered into 25 and 26 long term (6 months or longer) fixed price contracts to supply ACI systems with aggregate contract values including change orders of $35.8 million and $39.3 million, respectively. The total value per contract may change due to the relative sizes of ACI systems and the contracts related thereto. During the years ended December 31, 2014 and 2013, we completed 15 and two ACI systems, recognizing revenues of $11.1 million and $3.2 million and costs of revenue of $8.1 million and $2.4 million, respectively. We did not recognize any loss provisions related to contracts in 2014 and 2013 related to ACI systems.

During the years ended December 31, 2014 and 2013, we entered into 13 and 24 long term (6 months or longer) fixed price contracts to supply DSI systems and other material handling equipment with contract values including associated change orders of $10.9 million and $46.9 million, respectively. Total value per contract may change due to the relative sizes of DSI systems the contracts related thereto. During the years ended December 31, 2014 and 2013, we completed two and seven DSI systems and five and six other material handling equipment systems, recognizing revenues of $0.6 million and $2.0 million and costs of revenue of $0.8 million and $6.8 million, respectively. Due to potential cost overruns related to certain DSI projects, we expect that the future relationship between revenues and costs may be dissimilar from prior results. Certain of the DSI system long-term fixed price contracts were expected to be completed with losses. As a result, cost of sales included $0.3 million and $4.8 million in loss provisions related to contracts recognized in 2014 and 2013, respectively, related to DSI system contracts.

The remaining changes were due to other equipment projects.

Demand for ACI and DSI system contracts in 2013 and 2014 was driven by coal fired power plant utilities that need to comply with MATS and MACT standards by 2015. Changes in revenues related to ACI and DSI system contracts fluctuate due to changes in the number of contracts entered into as well as the long-lead time requirements for manufacturing, installation and testing of the equipment and ultimately the timing of revenue being recognized, which is based on substantial completion of the contract.

Consulting services and Consulting services cost of revenue

We provided consulting services related to emissions regulations. Revenues decreased year over year due to a decrease in average contract revenue, driven by several large consulting contracts related to regulatory compliance in 2013 that were replaced by smaller scale consulting contracts with new customers in 2014. The decrease in consulting service revenues were also due to the Company's reduction in force of personnel providing consulting services.

Chemicals and other and Chemical and other cost of revenue

During the years ended December 31, 2014 and 2013, the most significant component of Chemicals and other revenues and costs of revenues were chemical sales related to emissions control technologies. Revenues decreased year over year due to decreased demand from one significant customer upgrading its facilities which decreased the amount of chemicals needed to comply with regulatory standards.

Additional information related to revenue concentrations and contributions by class and reportable segment can be found in Note 18 to the Company's Consolidated Financial Statements.

Other Operating Expenses

A summary of the components of our other operating expenses, exclusive of costs of revenue, shown above, for the years ended December 31, 2014 and 2013 is as follows:

	Years Ended December 31,		Change	
(in thousands, except percentages)	2014	2013	($)	(%)
Operating expenses:				
Payroll and benefits	$20,767	$16,228	$4,539	28 %
Rent and occupancy	2,468	2,128	340	16 %
Legal and professional fees	14,430	4,534	9,896	218 %
General and administrative	6,066	4,101	1,965	48 %
Research and development, net	1,521	3,237	(1,716)	(53)%
Depreciation and amortization	1,865	1,648	217	13 %
Total operating expenses	$47,117	$31,876	$15,241	48 %

Payroll and benefits

Payroll and benefits expenses increased in 2014 compared to 2013 due to an increase in executive and overall and executive head count, as well as restructuring expenses, including the modification and acceleration of restricted stock awards during 2014 in connection with the departure of certain executive officers and management's alignment of the business with strategic objectives. Restructuring expenses recorded during 2014 were $3.5 million compared to $0.1 million in 2013, of which $1.0 million was due to the accelerated vesting of modified equity-based compensation awards for certain terminated employees. Stock based compensation expense, excluding the impact of accelerated vesting of awards, also increased by $1.4 million in 2014 compared to 2013. These increases were offset by a $1.4 million decrease related to incentive compensation in 2014 compared to 2013.

Rent and occupancy

Rent and occupancy expenses increased in 2014 compared to 2013 primarily due to the Company leasing an additional 19,000 square feet of office and manufacturing space related to our BCSI operations.

Legal and professional fees

Legal and professional fees expenses increased by $6.1 million in 2014 compared to 2013 as a result of the significant professional resources deployed to address the Re-audit and Restatement of our consolidated financial statements, including the ongoing SEC Inquiry. Other increases in expenses associated with professional fees were due to a $0.9 million increase in the residual payment agreement with a former consultant who was involved in the development and deployment of RC technologies and $1.6 million of accrued expense related to the termination of the consulting agreement with the former owner of the DSI equipment assets acquired by BCSI ("DSI Business Owner") as described in Note 8 of the Consolidated Financial Statements. The remaining increase was due to legal and professional fees associated with the realignment of our business with strategic objectives and expenses incurred in the normal course of business.

General and administrative

General and administrative expenses increased in 2014 compared to 2013 by $2.0 million primarily due to a $0.6 million increase in executive and other personnel talent acquisition costs, $0.4 million related to administrative travel expenses and a $0.5 million allowance against the entire principal balance of a note receivable, described in Note 11, as of December 31, 2014. Additionally, we recognized impairment charges on BCSI property and equipment during the years ended December 31, 2014 and 2013 of $0.4 million and $0.1 million, respectively, as projected future cash flows from operations related to the property and equipment did not support the carrying value recorded by the Company. During 2013, we also impaired the entire goodwill balance related to the 2012 BCSI acquisition, resulting in $0.2 million impairment charge.

Research and development, net

Research and development expense decreased in 2014 compared to 2013 due to a decrease in personnel allocated to R&D and an overall decrease in R&D activities. We recorded gross R&D expenses of $3.6 million and $13.1 million in 2014 and 2013, respectively, offset by reimbursements received from the DOE and industry cost share partners of 2.0 million and 9.8 million, respectively. Expenses during 2013 were most significantly driven by a CO_2 research project for which the most material spend related to the construction of equipment which occurred during 2013. The Company's expenses related to this project during 2014 did not require significant amounts related to construction of equipment for the research.

Depreciation and amortization

Depreciation and amortization expense increased in 2014 compared to 2013 due to asset additions.

Other Income (Expense), net

A summary of the components of our other income (expense), net for the years ended December 31, 2014 and 2013 is as follows:

	Years Ended December 31,		Change	
(in thousands, except percentages)	2014	2013	($)	(%)
Other income (expense):				
Earnings from equity method investments	$42,712	$15,502	$27,210	176 %
Royalties, related party	6,410	2,505	3,905	156 %
Interest income	74	109	(35)	(32)%
Interest expense	(5,725)	(1,338)	(4,387)	328 %
Other	26	(44)	70	(159)%
Total other income (expense), net	$43,497	$16,734	$26,763	160 %

Earnings in equity method investments

The following table shows the equity method earnings, by investee, recognized by the Company:

	Year ended December 31,		Change	
(in thousands)	2014	2013	($)	(%)
Earnings from CCS	$43,584	$13,813	$29,771	216%
Earnings from CCSS	3,625	1,689	1,936	115%
Loss from RCM6	(4,497)	—	(4,497)	*
Earnings from equity method investments	$42,712	$15,502	$27,210	176%

Earnings from equity method investments increased in 2014 compared to 2013 due to the operations of the Company's equity method investees and increases in cash distributions in excess of our investment balance from CCS. The weighted-average number of invested RC facilities, based upon the number of months each facility was invested during the respective years, increased year over year. The number of invested RC facilities that were generating rental income as of December 31, 2014 and 2013, were 12 and eight, respectively. The weighted-average number of retained RC facilities, based upon the number of months each facility was retained during the respective years, increased year over year. The number of retained RC facilities that were generating PTCs and other tax benefits as of December 31, 2014 and 2013, were five and four, respectively.

We recognized $43.6 million and $13.8 million of equity income from CCS for the years ended December 31, 2014 and 2013, compared to our proportionate share of CCS' net income of $26.6 million and $8.9 million, respectively. The difference between our pro-rata share of CCS's net income (loss) and our earnings from our CCS equity method investment as reported on our Condensed Consolidated Statements of Operations relates to the Company receiving distributions in excess of the carrying value of the investment during prior periods, and therefore recognizing such excess distributions as equity method earnings in the period the distributions occur. If CCS subsequently reports net income, the Company will not record its pro-rata share of such net income until its cumulative share of pro-rata net income equals the amount of its cumulative income recognized due to cash being distributed. Until such time, the Company will only report income from CCS to the extent of cash distributions. The following table shows the Company's investment balance, equity earnings, cash distributions received and cash distributions in excess of the investment balance for the years ended December 31, 2014 and 2013 (in thousands):

Description	Date(s)	Investment balance	ADES equity earnings (loss)	Cash distributions	Memo Account: Cash distributions and equity loss in (excess) of investment balance
Beginning balance	12/31/2012	$ —	$—	$ —	$ (8,003)
ADES proportionate share of income from CCS (1)	2013 activity	8,910	8,910	—	—
Increase of equity loss in excess of investment balance (prior to cash distributions)	2013 activity	(8,003)	(8,003)	—	8,003
Current year cash distributions from CCS	2013 activity	(13,813)	—	13,813	—
Adjustment for current year cash distributions in excess of investment balance	2013 activity	12,906	12,906	—	(12,906)
Total investment balance, equity earnings (loss) and cash distributions	12/31/2013	—	13,813	13,813	(12,906)
ADES proportionate share of income from CCS (1)	2014 activity	26,613	26,613	—	—
Recovery of cash distributions in excess of investment balance (prior to cash distributions)	2014 activity	(12,906)	(12,906)	—	12,906
Current year cash distributions from CCS	2014 activity	(43,584)	—	43,584	—
Adjustment for current year cash distributions in excess of investment balance	2014 activity	29,877	29,877	—	(29,877)
Total investment balance, equity earnings (loss) and cash distributions	12/31/2014	$ —	$43,584	$ 43,584	$ (29,877)

(1) The amounts of the Company's 42.5% proportionate share of net income as shown in the table above differ from mathematical calculations of the Company’s 42.5% equity interest in CCS multiplied by the amounts of Net Income available to Class A members as shown in the table above of CCS results of operations due to adjustments related to the Redeemable Class B preferred return and the elimination of CCS earnings attributable to RCM6, of which the Company owned 24.95% during the year ended December 31, 2014.

As a result of earnings and cash flows from invested RC facilities, CCS distributed $43.6 million in cash that resulted in equity method earnings during 2014, compared to distributions and earnings of $13.8 million during 2013.

Equity earnings from our interest in CCSS increased by $1.9 million in 2014 as compared to 2013, primarily due to an increase in the number of RC facilities being operated by CCSS. The weighted-average number of RC facilities for which CCSS had operating and maintenance agreements in place, based upon the number of months each facility was operated during the respective years, increased year over year. As of December 31, 2014 and 2013, CCSS had operating and maintenance agreements with 17 and 12 RC facilities, respectively. CCSS derives earnings both from fixed-fee arrangements as well as fees that are tied to actual RC production, depending upon the specific RC facility operating and maintenance agreement.

During February 2014, we purchased a membership interest in RCM6 and recognized equity method losses resulting from the operation of the RC facility owned by RCM6, which generated tax credits and tax benefits available to the Company.

Although all of our deferred tax assets have a full valuation allowance recorded against them as of December 31, 2014 and 2013, we earned the following tax credits which may be available for future benefit related to the operation of retained RC facilities:

	Years Ended December 31,	
(in thousands)	2014	2013
IRC Section 45 tax credits earned	$25,817	$15,366

Additional information related to equity method investments can be found in Note 7 to our Consolidated Financial Statements.

Royalties, related party

As of December 31, 2014 and 2013, RC was produced at six and three RC facilities, respectively, using M-45™ and M-45-PC™ technologies, which CCS licenses from us. During the years ended December 31, 2014 and 2013, there was 12.4 million tons and 5.1 million tons of RC produced at those facilities, respectively.

Interest expense

Interest expense increased in 2014 compared to 2013 by $2.1 million due to the increase in RC facilities on which CCS recognized installment sales for tax purposes from five to 11. IRC section 453A requires taxpayers using the installment method to pay an interest charge on the portion of the tax liability that was deferred under the installment method. The following table shows the balance of the tax liability that has been deferred and the applicable interest rate to calculate 453A interest:

	As of December 31,	
(in thousands)	2014	2013
Tax liability deferred on installment sales (1)	$120,129	$43,777
Interest rate	3.00 %	3.00 %

(1) Represents the approximate tax effected liability related to the deferred gain on installment sales.

Additionally, interest expense increased by $2.2 million related to a note payable used to finance our purchase of RCM6 in February 2014.

Income tax expense

We did not recognize any federal income tax expense (benefit) during the years ended December 31, 2014 or 2013 as a result of recording full valuation allowances against all of our net deferred tax assets in all jurisdictions. However, we did recognize state income tax expense for the years ended December 31, 2014 and 2013 of $0.3 million and $0.5 million, respectively. See Note 16 in our Consolidated Financial Statements for additional information.

Business Segments

As discussed in Item 1 and Note 17 of the Consolidated Financial Statements, during the fourth quarter of 2015, the Company realigned is operating segments into two reportable segments: (1) Refined Coal ("RC"); and (2) Emissions Control ("EC"). Following the realignment, the Company retroactively adjusted all segment related disclosures included within the notes to the Consolidated Financial Statements as well as within this Item. The business segment measurements are computed in accordance with the principles listed below:

- The accounting policies of the operating segments are the same as those described in the summary of significant accounting policies except as described below.
- Segment revenues include the Company's equity method earnings and losses from the Company's equity method investments. Segment revenue also includes the Company's royalty earnings from CCS.
- Segment operating income (loss) includes the Company's equity method earnings and losses from the Company's equity method investments and royalty earnings from CCS. However, segment operating income (loss) excludes Payroll and benefits, Rent and occupancy, Legal and professional fees, and General and administrative ("Corporate general and administrative expenses") as well as depreciation and amortization expense, unless otherwise specifically included as the Company does not allocate those amounts between segments.
- Items not included in consolidated operating income are excluded from segment operating income except for 453A interest and RCM6 interest expense, which is directly attributable to our RC segment.

The principal products and services of our segments are:

1. RC - Our RC segment derives its earnings from equity method investments as well as royalty payment streams and other revenues related to enhanced combustion of and reduced emissions of both NO_X and mercury from the burning of coals. The Company's equity method investments related to the RC segment include CCS, CCSS and RCM6. Segment revenues includes the Company's equity method earnings and losses from the Company's equity method investments and royalty earnings from CCS. These earnings are included within the Earnings from equity method investments and Royalties, related party line items in the Consolidated Statements of Operations.
2. EC - Our EC segment includes revenues and related expenses from the sale of ACI and DSI equipment systems, consulting services and chemical and other sales related to the reduction of emissions in the coal-fired electric generation process and the electric utility industry. The fabrication of ACI systems is largely dependent upon third party manufacturers. We historically have fabricated DSI systems through our subsidiary BCSI, however, we closed the fabrication facility during the fourth quarter of 2015 and future fabrication will occur through the use of third party manufacturers. These amounts are included within the respective revenue and cost of sales line items in the Consolidated Statements of Operations.

Management uses segment operating income (loss) to measure profitability and performance at the segment level. Management believes segment operating income (loss) provides investors with a useful measure of our operating performance and underlying trends of the businesses. Segment operating income (loss) may not be indicative of our overall consolidated performance and therefore, should be read in conjunction with our consolidated results of operations.

The following table presents our operating segment results for the years ended December 31, 2015, 2014 and 2013:

	Years Ended December 31,			Change	
(in thousands)	2015	2014	2013	($)	($)
Revenues:					
Refined Coal:					
Earnings from equity method investments	$8,921	$42,712	$15,502	$(33,791)	$27,210
Consulting services	55	665	1,330	(610)	(665)
Royalties, related party	10,642	6,410	2,505	4,232	3,905
	19,618	49,787	19,337	(30,169)	30,450
Emissions Control:					
Equipment sales	60,099	12,044	5,747	48,055	6,297
Consulting services	1,697	3,823	5,460	(2,126)	(1,637)
Chemical and other	888	391	749	497	(358)
	62,684	16,258	11,956	46,426	4,302
Total segment reporting revenues	$82,302	$66,045	$31,293	$16,257	$34,752
Adjustments to reconcile to reported revenues:					
Refined Coal:					
Earnings from equity method investments	$(8,921)	$(42,712)	$(15,502)	33,791	(27,210)
Royalties, related party	(10,642)	(6,410)	(2,505)	(4,232)	(3,905)
	(19,563)	(49,122)	(18,007)	29,559	(31,115)
Total reported revenues	62,739	16,923	13,286	45,816	3,637
Segment reporting operating income (loss)					
Refined Coal	$12,131	$42,094	$16,227	$(29,963)	$25,867
Emissions Control	(7,583)	(13,348)	(14,494)	5,765	1,146
Total segment operating income (loss)	$4,548	$28,746	$1,733	$(24,198)	$27,013

A reconciliation of segment operating income (loss) to consolidated net income (loss) is included within Note 17 of the Consolidated Financial Statements.

RC

The following table details the segment revenues of the Company's respective equity method investments:

	Year ended December 31,		
(in thousands)	2015	2014	2013
Earnings from CCS	$8,651	$43,584	$13,813
Earnings from CCSS	4,838	3,625	1,689
Loss from RCM6	(4,568)	(4,497)	—
Earnings from equity method investments	$8,921	$42,712	$15,502

We recognized $8.7 million, $43.6 million and $13.8 million of equity income from CCS for the years ended December 2015, 2014 and 2013, respectively, compared to our proportionate share of CCS' net income of $35.3 million, $26.6 million and $8.9 million, respectively. The difference between our pro-rata share of CCS's net income (loss) and our earnings from our CCS equity method investment as reported on our Consolidated Statements of Operations relates to the Company receiving cumulative distributions in excess of our share of cumulative CCS earnings, and therefore recognizing such excess distributions as equity method earnings in the period the distributions occur. When CCS subsequently reports net income, we will only recognize income to the extent of cash distributions, until such time as the cumulative amount of earnings equals the cumulative amount of distributions; thereafter, we will recognize our proportionate share of net income (loss).

Additional discussion of our equity method investments is included above within our consolidated results and in Note 7 of the Consolidated Financial Statements.

During the years ended December 31, 2015, 2014 and 2013, there was 22.0 million, 12.4 million and 5.1 million tons, respectively, of RC produced using M-45™ and M-45-PC™ technologies, which CCS licensed from us beginning in July 2012. These increases in tons produced were driven by increases in the number of RC facilities using the M-45™ and M-45-PC™ technologies. We expect an increase in royalties in 2016 as a result of an increase in RC facilities using our technologies and the tons of RC produced at those facilities.

Consulting services previously provided to CCS and CCSS related to the installation of RC facilities has decreased as the material work related to those projects was significantly completed during 2013 and 2014. The Company does not expect that consulting services related to the RC segment will be material in the future.

Segment operating income (loss) decreased during 2015 compared to 2014 due to the decrease in revenues, driven by the decrease in cash distributions from CCS and a $1.2 million increase in 453A interest, offset by an increase in CCSS earnings of $1.2 million and Royalties related to CCS's use of our M-45 License of $4.2 million, as discussed within our consolidated results of operations.

Segment operating income (loss) increased during 2014 compared to 2013 due to the increase in revenues, offset by a $4.4 million increase in interest expense due to 453A interest and the Company's purchase of an interest in RCM6, as discussed within our consolidated results of operations.

EC

During the years ended December 31, 2015 and 2014, we completed 32 and 15 ACI systems, recognizing revenues of $51.7 million and $11.1 million and costs of revenue of $38.4 million and $8.1 million, respectively. We recognized $0.1 million and zero on loss provisions related to ACI system contracts in 2015 and 2014, respectively. We also completed seven and two DSI systems and two and five other material handling equipment systems, recognizing revenues of $7.2 million and $0.6 million and costs of revenue of $5.9 million and $0.8 million, respectively. Cost of sales were impacted year over year due to $0.3 million and $0.3 million in loss provisions related to contracts recognized in 2015 and 2014, respectively, related to DSI contracts. The increase in the completion of equipment contracts was a combination of the timing of entering into the contracts and the completion of such contracts.

During the years ended December 31, 2014 and 2013, we completed 15 and 2 ACI systems, recognizing revenues of $11.1 million and $3.2 million and costs of revenue of $8.1 million and $2.4 million, respectively. The decrease in the completion of equipment contracts was a combination of the timing of entering into the contracts as well as the extended timing of completed contract revenue recognition. We did not record any loss provisions related to ACI contracts in 2014 or 2013. During the years ended December 31, 2014 and 2013, we also completed two and seven DSI systems and five and six other material handling equipment systems, recognizing revenues of $0.6 million and $2.0 million and costs of revenue of $0.8 million and $6.8 million, respectively. The increase in 2013 was partially due to 2013 being the first full year of BCSI operations, which were acquired in the third quarter of 2012. Certain of the DSI long term fixed price contracts were expected to be completed with losses. As a result, cost of sales includes $0.3 million and $4.8 million in loss provisions in 2014 and 2013 respectively, related to DSI contracts.

Consulting service revenues decreased during 2015 compared to 2014 due to a decrease in average contract revenue, driven by smaller scale consulting contracts with new customers in 2015 and the Company's reduction in force of personnel providing consulting services.

Consulting service revenues decreased during 2014 compared to 2013 due to a decrease in average contract revenue, driven by several large consulting contracts related to regulatory compliance in 2013 that were replaced by smaller scale consulting contracts with new customers in 2014. The decrease in consulting service revenues were also due to the Company's reduction in force of personnel providing consulting services.

During the years ended December 31, 2015 and 2014, the most significant component of Chemicals and other revenues and costs of revenues were chemical sales related to emissions control technologies. Revenues increased during 2015 compared to 2014 due to an increase in average contract revenue. The increase in revenue is also due to the Company's increased focus on selling these products to coal-fired power plants to be in compliance with applicable regulations.

During the years ended December 31, 2014 and 2013, Chemicals and other revenues decreased year over year due to decreased demand from one significant customer upgrading its facilities which decreased the amount of chemicals needed to comply with regulatory standards.

Segment operating loss decreased during 2015 compared to 2014, which was most significantly impacted by the increase in operating income related to the historical EC-ETS segment. This increase was offset by continued losses related to the historical EC-Manufacturing and R&D segments in excess of $6.6 million and $6.7 million, respectively. Losses within the EC segment included restructuring charges of $5.1 million, of which $1.9 million related to impairment charges recorded for ADA Analytics. Due to restructuring activities and the continued alignment of the business with strategic objectives, the Company believes operating losses related to the EC segment will decrease in 2016 and beyond.

Segment operating loss decreased during 2014 compared to 2013 most significantly impacted by the increase in operating income related to equipment and decreases in research and development due to a CO_2 research project for which the most material expenses related to the construction of equipment occurred during 2013, offset by increases in headcount, restructuring charges and legal and professional fees, most significantly due to $1.6 million of accrued expense related to the termination of the consulting agreement with the DSI Business Owner.

Liquidity and Capital Resources

Overview of Factors Affecting Our Liquidity

During 2015 our working capital and cash balances continued to decline, due principally to continued losses. Such losses were driven primarily by poor operating performance related to DSI equipment, which is included within the Emissions Control segment as of December 31, 2015, substantial and continuing expenditures required to fund the Restatement activities, and a significant reduction in the receipt of cash distributions from CCS. This deterioration of working capital directly necessitated the securing of the loan transaction described below. We expect that pressure on our working capital will continue until such time as all Restatement activities are completed, including resolution of the SEC inquiry and the conclusion of the private litigation described in Note 14 to the consolidated financial statements.

Our principal sources of liquidity currently include:

- cash on hand;
- distributions from CCS and CCSS;
- royalty payments from CCS; and
- proceeds from the securing of debt facilities, such as the $15 million term loan obtained in October 2015, as described below.

In November 2013, we received net proceeds from a common stock offering of $29.0 million, which were used for general operating needs. Additionally, in September 2013, we entered into a 2013 Loan and Security Agreement with a bank for an aggregate principal amount of $10.0 million that is secured by certain amounts due to us from certain CCS RC leases (the "Line of Credit"). As amended, the Line of Credit is available until May 31, 2016. Since June 2014, we have been unable to borrow from our Line of Credit as a result of not being in compliance with certain covenants related to its loan agreement. No borrowings were outstanding as of December 31, 2015 or 2014. Prior to June 2014, the Line of Credit was used primarily to provide collateral support for certain Letters of Credit that had been issued to customers related to certain contractual performance and payment guarantees, typically provided in lieu of surety bonds. Upon notification of such covenant non-compliance, we were required to secure such letters of credit with cash collateral. In addition, we are required to provide cash collateral to certain other financial institutions that have issued letters of credit providing security for continuing royalty indemnification obligations related to the settlement of certain litigation. The collateral amounts are disclosed on our balance sheets as Restricted cash, Restricted cash, long-term and Investment securities, restricted, long-term. As of December 31, 2015 and 2014, these collateral amounts totaled $12.0 million and $11.6 million, respectively. Due to our negative working capital as well as a significant decrease in CCS distributions, we were required to obtain additional financing during the fourth quarter of 2015, as discussed below.

On October 22, 2015, we entered into a $15.0 million short-term loan agreement with Franklin Mutual Quest Fund and MFP Investors LLC (the "Lenders"), and Wilmington Trust, National Association, as the administrative agent and collateral agent (the “Credit Agreement”), which was subsequently amended in 2016 as discussed below. Under the original terms and conditions, the Credit Agreement matured on April 22, 2016, subject to a three-month extension at the Company's option to the extent certain conditions are met. The loan under the Credit Agreement bears interest at a stated annual rate equal to 10.5% and is subject to various prepayment and other premiums if certain events occur, including upon certain asset sales or receipts of certain types of cash proceeds outside the ordinary course of business, a change in control or an event of default. Upon closing, we received net proceeds of $13.5 million and recorded debt discounts and debt issuance costs of $1.5 million. The debt discounts and debt issuance costs are being amortized to interest expense using the effective interest method over the life of the Credit Agreement. The net proceeds received are being used to fund our working capital needs and for general operating purposes. The Credit Agreement may become due prior to maturity, based on certain customary events requiring mandatory prepayment, including upon certain asset sales or receipts of certain types of cash proceeds outside the ordinary course of business, upon a change of control, and upon a default.

On February 8, 2016, the Company entered into the first amendment to the Credit Agreement ("First Amendment") that extended the 2015 SEC filings date to March 30, 2016. On March 30, 2016, the Company entered into the second amendment to the Credit Agreement ("Second Amendment"). The Second Amendment extended the maturity date to July 8, 2016, extended the Company's filing date deadline related to its 2015 SEC filings to April 20, 2016, increased

the stated interest rate from 10.5% to 15.0% and increased the minimum cash balance requirement from $3.0 million to $3.5 million. The Company incurred approximately $0.6 million in fees related to the Second Amendment.
The Line of Credit has been amended six times (December 2, 2013, April 3, 2014, September 20, 2014, December 15, 2014, May 29, 2015 and September 30, 2015), most notably to extend the maturity date. The lender has also provided seven waivers relating to various transactions and obligations to provide financial information to the lender. As amended, the Line of Credit is available until May 31, 2016. No amounts were drawn on the Line of Credit during the years ended December 31, 2015 and 2014, respectively. As stated above, we are not currently able to draw on the line of credit.

Our primary uses of liquidity in 2015, in addition to the restricted cash assets described above, include the funding of operating expenses, royalty indemnification payments, capital expenditures, investments in and advances to non-controlled entities, interest expense, most significantly related to 453A interest, RCM6 capital calls (which are no longer required), research and development costs, as well as the funding of substantial and continuing costs and expenses related to the re-audits of prior year financial statements, including litigation and other expenses related thereto. During 2015, we used cash resources to acquire certain assets of InSyst Ltd. and ClearView Monitoring Solutions Ltd. In addition, during 2015, we used cash resources to fund costs associated with the reduction in force, the departure of certain executive officers and certain other expenses associated with management's alignment of the business with strategic objectives.

Our ability to generate sufficient cash flow required to meet ongoing operational needs and to meet our obligations, including the repayment of the loan under the Credit Agreement, depends upon several factors, including executing on our contracts and initiatives, discussed above, receiving royalty payments from CCS and distributions from CCS and CCSS, and our ability to maintain a significant share of the market and increase operational efficiencies for emissions control equipment, chemicals and services. Distributions from CCS will likely be dependent upon the securing of additional tax equity investors for those CCS facilities that are currently not operating, or operating as retained RC facilities. If we are unable to generate sufficient cash flow, we may be unable to meet our operational needs and/or repay our loan when due. Should this be the case, we will seek to refinance the loan or obtain alternative financing. If we are unable to refinance the loan or obtain alternative financing, our lenders would be entitled to take possession of the collateral securing the indebtedness, which includes substantially all of our assets, to the extent permitted by the Credit Agreement and applicable law.

Sources and Uses of Cash
Year ended December 31, 2015 vs. Year ended December 31, 2014
Cash and cash equivalents decreased from $25.2 million as of December 31, 2014 to $9.3 million as of December 31, 2015, a decrease of $15.9 million.

	Years Ended December 31,		
(in thousands)	2015	2014	Change
Cash provided by (used in):			
Net cash used in operating activities	$(28,179)	$(42,549)	$14,370
Net cash provided by investing activities	2,234	31,405	(29,171)
Net cash provided by (used in) financing activities	10,029	(1,565)	11,594
Decrease in Cash and Cash Equivalents	(15,916)	(12,709)	(3,207)

Notable areas that contributed to this decrease include the increases in expenses and cash spend for payroll and benefits, legal and professional fees and general and administrative costs, as well as the following operating activities: i) an increase in accounts receivables, including accounts receivable, related party ($7.8 million); ii) payment of settlement royalties ($3.7 million); iii) an increase in prepaid expenses and other long-term assets ($2.0 million); iv) a decrease in the Advance deposit, related party ($3.5 million); and, v) net payments related to extended equipment contracts ($8.7 million).
Equity income from equity method investments ($8.9 million) was also offset by actual cash distributions, included within operating and investing cash flows, from our equity method investees of $13.7 million.
In addition, the following investing activities also contributed to the decrease in cash balances: i) the transfer of unrestricted cash to restricted cash to provide collateral for certain letters of credit ($2.1 million); and ii) acquisitions of property and equipment and equity method investees ($2.6 million).
These cash outflows were offset in part by the following notable cash inflows: i) Distributions from equity method investees ($13.7 million, inclusive of both return on and return of investment distributions); and ii) non-cash charges included in the Consolidated Statements of Operations ($13.5 million).
Cash flow from operating activities
Cash flows used in operating activities reflect the timing of our working capital requirements, in addition to other items discussed herein.
Our cash spend for legal and professional fees our efforts related to the Restatement process and SEC Inquiry increased by $2.9 million from that of the comparable prior year period, primarily due to our efforts related to the Restatement process and SEC Inquiry. We expect elevated legal and professional spend to continue in 2016 for completion of the Restatement process and efforts related to the ongoing SEC Inquiry and legal proceedings.
Deferred revenue and project costs resulted in a change in the use of operating cash flows on a net basis of $7.7 million due to production of ACI and DSI equipment systems. However, pursuant to the completed contract revenue recognition method, these billings and related costs have not yet been recognized within revenues and cost of sales, respectively. Cash flows related to the production of ACI and DSI equipment systems are expected to be similar to those experienced in 2014 as customers work to become compliant with regulatory emissions standards.
During 2013, we received $8.0 million of advance deposits related to expected future royalties from CCS that are offset against of portion of future royalty earnings. Royalty earnings, net of the advanced payment offset positively impacted operating cash flows by $2.1 million in 2013. We did not receive additional advanced deposits during 2014 or 2015. As future royalties are generated, we will receive less cash than royalties earned as a portion of the future earnings will be offset against prior period prepayments.
We are required to provide collateral for certain letters of credit for ACI and DSI equipment, as discussed in Note 14 of the our Consolidated Financial Statements. Cash is pledged as security for letters of credit in the same amount as the investments. Due to the completion of certain ACI and DSI equipment contracts, the Company was no longer required to collateralize related letters of credit. During 2014, due to the increase in ACI and DSI equipment contracts in progress, the Company was required to collateralize letters of credit.
Our operating cash flow may also be significantly impacted by distributions from our equity investees which are classified as either a return on investment within operating cash flows or a return in excess of cumulative earnings

within investing cash

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flows. During 2014, we received $29.8 million more in total cash distributions from equity method investees than we did in 2013.

Cash flow from investing activities

Purchase and maturity of investments in securities, restricted and Increase in restricted cash

We are required to provide collateral for certain letters of credit for future payments related to royalty indemnification obligation and other payments as discussed in Note 14 of the our Consolidated Financial Statements. Investment securities and cash are pledged as security for letters of credit in the same amount as the investments. The restricted investments and cash increased during 2015 and 2014 due to a contractual requirement related to the royalty indemnification obligation.

Acquisition of property and equipment and Advance on note receivable

Acquisitions of property and equipment were $0.5 million in 2015, are estimated to decrease in 2016 and are expected to be funded by cash flows from equity investee distributions. However, if cash flows from investee distributions are insufficient, we may elect to decrease our discretionary capital expenditures. During 2015 and 2014, the Company used investing cash flows for the purchase of equipment and leasehold improvements.

Advance on note receivable

In December 2014, we loaned $0.5 million to an independent third party to provide financing for the pursuit of emissions technology projects, bearing annual interest of 8%. Interest and principal were payable at maturity of the agreement in June 2015. In March 2015, we loaned an additional $0.5 million to the third party, continuing to bear annual interest at 8%. All interest and principal payments were then deferred until March 2018. As of December 31, 2015, we have recorded an allowance against the entire principal balance of the note receivable outstanding, reversed accrued interest and put the note on non-accrual status, as described in Note 11.

Acquisition of a business

During March 2015, we acquired Clearview, which operated as ADA Analytics, for $2.4 million cash, as described in Note 8 of the Consolidated Financial Statements, $2.1 million of which was paid in the current year. The Company acquired the in-process research and development in order to potentially commercialize and expand its analytics services available to customers. However, in August 2015, as part of a broader strategic restructuring of our business to simplify our operating structure in a manner that creates increased customer focus, better supports sales and product delivery and also aligns the Company’s cost structure as the emissions control market shifts towards compliance solutions for the Federal Mercury and Air Toxics Standards ("MATS"), the Company’s management approved an action to wind down operations of ADA Analytics.

Equity method and cost method investments

On February 10, 2014, we purchased a 24.95% membership interest in RCM6, which owns a single RC facility that produces RC that qualifies for Section 45 tax credits. Total consideration given included a cash payment of $2.4 million and the execution of a $13.3 million note payable. In addition, we are subject to quarterly capital calls and variable payments based upon differences in originally forecasted RC production as of the purchase date and actual quarterly production. Due to the difference of the stated rate and the effective rate, the note payable is carried at a discount of $7.6 million and $10.1 million as of December 31, 2015 and 2014, respectively. During the year ended December 31, 2015 we also funded capital calls and made variable payments of $2.4 million. On March 3, 2016, we sold our entire membership interest in RCM6. We received a cash payment of $1.8 million related to the sale and have no future obligations related to previously recorded notes payable. We will continue to be positively impacted by the sale of our RCM6 membership interest going forward, as we will receive our pro-rata share of income and cash distributions through our ownership in CCS. The income and cash distribution will be generated from the RCM6 RC facility lease payments made to CCS.

As discussed within the Results of Operations and the operating cash flow activities above, our investing cash flow may also be significantly impacted by the classification of cash distributions from equity method investees as either a return on investment within operating cash flows or a return in excess of cumulative earnings within investing cash flows. There was an increase in distributions from equity method investments presented within the investing section due to an increase in year over year distributions in excess of cumulative earnings from CCS. During 2015 and 2014, all cash distributions from CCS were included within investing cash flows as returns of our equity investment in CCS.

In November 2014, we acquired an 8% interest in Highview Enterprises Limited ("Highview"), a London, England based developmental stage Company specializing in power storage, for $2.8 million.

Cash flow from financing activities
Short term borrowings and repayment of short term borrowings
In October 2015, we entered into a $15.0 million Credit Agreement from which we received net proceeds of $13.5 million and recorded debt discounts and debt issuance costs of $1.5 million. The Company made principal payments of $1.8 million during 2015.
Equity award activity
During 2014 we received proceeds from the exercise of options. During 2015 and 2014, we repurchased shares from employees upon the vesting of equity awards or upon options being exercised to cover the minimum statutory tax withholdings.
Notes payable activity
During the years ended December 31, 2015 and 2014 we used $1.5 million and $0.2 million cash, respectively, for repayments of principal on the RCM6 and DSI Business Owner notes payable, as described in Note 9 of the Consolidated Financial Statements. Principal payments increased period over period as the Company did not purchase RCM6 until the first quarter of 2014 and limited payments during 2014 were applied to the principal balance. Additionally, the Company did not terminate its consulting agreement with the DSI Business Owner until December 31, 2014, at which time the Company recorded a note payable for remaining amounts owed.
Significant non-cash transactions

	Years Ended December 31,		
(in thousands)	2015	2014	Change
Restricted stock award reclassification (equity to liability)	$ —	$ 501	$ (501)
Issuance of common stock to settle liabilities	—	127	(127)
Acquisition of equity method investment through note payable	—	13,301	(13,301)
Acquisition of technology license through long-term payable	—	1,525	(1,525)

During the year ended December 31, 2014, we reclassified certain restricted stock awards from equity to liabilities. No such reclassifications occurred during the year ended December 31, 2015.
During the years ended December 31, 2015 and 2014, we contributed zero and $0.1 million, respectively of common stock to the Company's 401(k) plan to settle the Company's matching contributions related to employee contributions.
In connection with the purchase of RCM6 in February 2014, we financed a portion of the transaction through a note payable with CCS. The initial note payable of $13.3 million, payable over seven years, was a non-cash transaction. On March 3, 2016, the Company sold its entire ownership interest in RCM6, a portion of which was non-cash in nature. The Company received a cash payment of $1.8 million related to the sale and has no future obligations related to previously recorded notes payable.
In November 2014, in addition to acquiring an 8% interest in Highview, we also licensed technology from Highview, in a long term, exclusive arrangement, that requires us to make payments over the course of 10 years totaling $3.4 million using the exchange rate in effect as of December 31, 2015. The technology license agreement was amended in November 2015 to defer license fee payments for a year, to allow us to elect a non-exclusive license at a lower cost, or to terminate the license in return for paying a buy-out fee starting at £0.2 million ($0.3 million based upon the exchange rate in effect as of the date of the November 2015 amendment) if terminated in 2016 and reducing annually over the term of the 10 year agreement.

Year ended December 31, 2014 vs. Year ended 2013

Cash and cash equivalents decreased from $37.9 million as of December 31, 2013 to $25.2 million as of December 31, 2014, a decrease of $12.7 million, primarily due to an increase in expenses and cash spend for payroll and benefits, legal and professional fees and general and administrative costs. Additional decreases in cash were related to acquisitions of property and equipment, cost method investments and equity method investees of $11.0 million.

	Years Ended December 31,		
(in thousands)	2014	2013	Change
Cash provided by (used in):			
Net cash used in operating activities	$(42,549)	(10,192)	(32,357)
Net cash provided by investing activities	31,405	11,172	20,233
Net cash provided by (used in) financing activities	(1,565)	29,169	(30,734)
Increase (Decrease) in Cash and Cash Equivalents	(12,709)	30,149	(42,858)

Cash flow from operating activities

Cash flows used in operating activities reflect the timing of our working capital requirements, in addition to other items discussed herein.

Our cash spend for legal and professional fees increased by approximately $6.1 million from that of the comparable prior year period due to our efforts related to the Restatement process, SEC Inquiry and consulting fees paid to a former consultant for RC technology.

Deferred revenue and project costs resulted in a change in the use of operating cash flows on a net basis of $15.5 million due to production of ACI and DSI equipment systems. However, due to the completed contract revenue recognition method, these billings and related costs have not yet been recognized within revenues and cost of sales, respectively.

During 2013, we received $8.0 million of advance deposits related to expected future royalties from CCS that are offset against of portion of future royalty earnings. Royalty earnings, net of the advanced payment offset positively impacted operating cash flows by $7.2 million in 2013. We did not receive additional advanced deposits during 2014. As future royalties are generated, we will receive less cash than royalties earned as a portion of the future earnings will be offset against prior period prepayments.

We are required to provide collateral for certain letters of credit for ACI and DSI equipment, as discussed in Note 14 of the our Consolidated Financial Statements. Cash is pledged as security for letters of credit in the same amount as the investments. Due to the completion of certain ACI and DSI equipment contracts, the Company was no longer required to collateralize letters of credit. During 2014 and 2013, due to the increase in ACI and DSI equipment contracts in progress, the Company was required to collateralize letters of credit.

Our operating cash flow may also be significantly impacted by distributions from our equity investees which are classified as either a return on investment within operating cash flows or a return in excess of cumulative earnings within investing cash flows. During 2014, we received $29.8 million more in total cash distributions from equity method investees than we did in 2013.

Cash flow from investing activities

Purchase and maturity of investments in securities, restricted and increase in restricted cash

We are required to provide collateral for certain letters of credit for ACI and DSI equipment projects, as well as for future payments related to royalty indemnification obligation payments as discussed in Note 14 of our Consolidated Financial Statements. Investment securities and cash are pledged as security for letters of credit in the same amount as the investments. The restricted investments and cash increased due to the increase in ACI and DSI projects and a contractual requirement related to the royalty indemnification obligation.

Acquisition of property and equipment

Acquisitions of property and equipment were $1.6 million in 2014. During 2014 and 2013, the Company used investing cash flows for the purchase of equipment and leasehold improvements.

In December 2014, we loaned $0.5 million to an independent third party to provide financing for the pursuit of emissions technology projects, bearing annual interest of 8%. Interest and principal were payable at maturity of the agreement in June

2015. All interest and principal payments were then deferred until March 2018. We recorded an allowance against the entire principal balance of the note receivable outstanding, reversed accrued interest and put the note on non-accrual status as of December 31, 2014, as described in Note 11.

Principal payments on note receivable, related party

During 2013, we collected the $0.5 million outstanding principal balance related to a note receivable from CCSS.

Advance on note receivable

In December 2014, we loaned $0.5 million to an independent third party to provide financing to for the pursuit of emissions technology projects, bearing annual interest of 8%. Interest and principal were payable at maturity of the agreement in June 2015. It was determined that the independent third party was not awarded contracts, which would have utilized their emissions technology. Without these contracts, we concluded that the ability of the independent third party to repay these loans was in doubt. We recorded an allowance against the entire principal balance of the note receivable outstanding, reversed accrued interest and put the note on non-accrual status as of December 31, 2014.

Equity method and cost method investments

On February 10, 2014, we purchased a 24.95% membership interest in RCM6, a single RC facility that produces RC that qualifies for Section 45 tax credits. Total consideration given included a cash payment of $2.4 million and the execution of a $13.3 million note payable. In addition, we are subject to quarterly capital calls and variable payments based upon differences in originally forecasted RC production as of the purchase date and actual quarterly production. Due to the difference of the stated rate and the effective rate, the note payable is carried at a discount of $10.1 million as of December 31, 2014. During the year ended December 31, 2014 we also funded capital calls and made variable payments of $4.2 million.

As discussed within the Results of Operations and the operating cash flow activities above, our investing cash flow may also be significantly impacted by the classification of cash distributions from equity method investees as either a return on investment within operating cash flows or a return in excess of cumulative earnings within investing cash flows. There was an increase in distributions from equity method investments within the investing section due to an increase in year over year distributions in excess of cumulative earnings from CCS. During 2014 and 2013, all cash distributions from CCS were included within investing cash flows.

In November 2014, we acquired an 8% interest in Highview Enterprises Limited ("Highview"), a London, England based developmental stage Company specializing in power storage, for $2.8 million.

Cash flow from financing activities

Equity offering

During November 2013, we completed an equity offering that generated net proceeds of approximately $29.0 million. The offering was undertaken to raise funds for general working capital and corporate purposes, as well as to provide funds for ACI and DSI equipment projects.

Equity award activity

During 2014 we received proceeds from the exercise of options. During 2014, these proceeds were offset by the repurchase of shares from employees upon the exercise of the option awards to cover the minimum statutory tax withholdings.

Notes payable activity

During the years ended December 31, 2014 we used $0.2 million of cash for repayments of principal on the RCM6 and DSI Business Owner notes payable, as described in Note 9 of the Consolidated Financial Statements. Principal payments increased period over period as the Company didn't purchase RCM6 until the first quarter of 2014 and limited payments during 2014 were applied to the principal balance.

Significant non-cash transactions

	Years Ended December 31,		
(in thousands)	2014	2013	Change
Restricted stock award reclassification (equity to liability)	$501	$991	$(490)
Issuance of common stock to settle liabilities	127	684	(557)

Acquisition of equity method investment through note payable	13,301	—	13,301
Acquisition of technology license through long-term payable	1,525	—	1,525

During the years ended December 31, 2014 and 2013, we reclassified certain restricted stock awards from equity to liabilities.

During the years ended December 31, 2014 and 2013, we contributed $0.1 million and $0.7 million, respectively of common stock to the Company's 401(k) plan to settle the Company's matching contributions related to employee contributions that were matched in common stock rather than cash during 2013 and a portion of 2014.

In connection with the purchase of RCM6 in February 2014, we financed a portion of the transaction through a note payable with CCS. The initial note payable of $13.3 million, payable over seven years, was a non-cash transaction. See Note 9 of our Consolidated Financial Statements within Item 8 of this Form 10-K for additional details related to this transaction.

In November 2014, in addition to acquiring an 8% interest in Highview, we also licensed technology from Highview, in a long term, exclusive arrangement that requires us to make payments over the course of 10 years totaling $3.4 million using the exchange rate in effect as of December 31, 2014. The technology license agreement was amended in November 2015 to defer license fee payments for a year, to allow us to elect a non-exclusive license at a lower cost, or to terminate the license in return for paying a buy-out fee starting at £0.2 million ($0.3 million based upon the exchange rate in effect as of the date of the November 2015 amendment) if terminated in 2016 and reducing annually over the term of the 10 year agreement.

Contractual Obligations

Our contractual obligations as of December 31, 2015 are as follows:

	Payment Due by Period				
(in thousands)	Total	Less than 1 year	1-3 years	4-5 years	After 5 years
Notes payable (a)	$15,910	$1,479	$2,944	$4,584	$6,903
Imputed interest (a)	12,132	2,484	4,672	3,502	1,474
Total notes payable	28,042	3,963	7,616	8,086	8,377
Short-term borrowings (b)	13,250	13,250	—	—	—
Capital lease obligations	17	9	8	—	—
Operating leases (c)	3,912	1,506	2,304	102	—
Purchase obligations (d)	—	—	—	—	—
Settlement and royalty indemnification (e)	24,022	3,749	14,293	5,980	—
Other long-term liabilities (f)	3,417	388	699	777	1,553
	$72,660	$22,865	$24,920	$14,945	$9,930

(a) On March 3, 2016, we sold our 24.95% membership interest in RCM6. As part of the consideration received from the sale, the purchaser assumed the outstanding note payable associated with our initial investment in RCM6. In February 2016, the Company entered into an agreement with the DSI Business Owner to settle the remaining amounts owed as of the date of the agreement of approximately $1.1 million for $0.3 million, which was paid in the first quarter of 2016. Amounts owed are included within the Notes Payable line item in the above table as of December 31, 2015.

As a result of the assumption of the future note and interest payments related to RCM6 and the settlement of the remaining amounts owed to the DSI Business Owner, excluding the $0.3 million paid to the DSI Business Owner in the first quarter of 2016, all future payments related to the notes payable amounts as of December, 31, 2015 will be eliminated.

(b) On October 22, 2015, the Company entered into a credit agreement for a $15.0 million short-term loan, with Franklin Mutual Quest Fund and MFP Investors LLC (the "Lenders"), and Wilmington Trust, National Association, as the administrative agent and collateral agent (the “Credit Agreement”) which was subsequently amended in 2016 as discussed below. Under the original terms and conditions, the Credit Agreement matured on April 22, 2016, subject to a three month extension at the Company's option to the extent certain conditions are met. The Credit Agreement bears interest at an annual rate equal to 10.5% and is subject to various prepayment and other premiums if certain events, including a change in control, occur. The Company received net proceeds of $13.5 million and recorded debt discount and debt issuance costs of $1.5 million. The debt discounts and debt issuance costs will be amortized to interest expense using the effective interest method over the life of the Credit Agreement. As of December 31, 2015, the unamortized debt discount and issuance costs was $0.6 million. The net proceeds were being used to fund working capital needs and for general operating purposes of the Company and its subsidiaries.

On February 8, 2016, the Company entered into the first amendment to the Credit Agreement ("First Amendment") that extended the SEC filings date to March 30, 2016. On March 30, 2016, the Company entered into the second amendment to the Credit Agreement ("Second Amendment"). The Second Amendment extended the maturity date to July 8, 2016, extended the Company's filing date deadline related to its 2015 SEC filings to April 20, 2016, increased the stated interest rate from 10.5% to

15.0% and increased the minimum cash balance requirement from $3.0 million to $3.5 million. The Company incurred approximately $0.6 million in fees related to the Second Amendment.

(c) Subsequent to December 31, 2015, and in connection with the aforementioned realignment of the Company's operations, the Company entered into an agreement to terminate various lease agreements covering approximately 207 thousand square feet of manufacturing, warehouse and office space located in Pennsylvania. As consideration for terminating the leases, the Company agreed to pay the lessor termination fees of $250 thousand in April 2016 and the same amount in April 2017. As a result, future minimum commitments under leases, net of the termination fees will be reduced by $0.9 million.

(d) Purchase obligations does not include commitments pursuant to subcontracts and/or other purchase orders related to equipment contracts since such amounts are expected to be funded under contract billings. In addition, purchase obligations do not include potential future variable payment obligations related to the acquisition of our equity interest in RCM6, as disclosed in Note 7 in our Consolidated Financial Statements.

(e) Future cash payments related to our Settlement and royalty indemnification may differ from the payment amounts included within the above schedule due to actual revenues generated by our former equity method investment and changes in estimates related to future revenues. If such differences were to occur, these changes would also impact our results of operations and financial condition.

(f) Obligations related to Other long-term liabilities relate to our November 2014 acquisition of licensed technology from Highview, in the form of a long term, exclusive arrangement, requiring us to make payments over the course of 10 years in the amount of $3.4 million. The technology license agreement was amended in November 2015 to defer license fee payments for a year, to allow us to elect a non-exclusive license at a lower cost, or to terminate the license in return for paying a buy-out fee starting at £0.2 million ($0.3 million based upon the exchange rate in effect as of the date of the November 2015 amendment) if terminated in 2016 and reducing annually over the term of the 10 year agreement.

We have not included obligations related to 453A interest payments due to uncertainty of amounts payable in future periods relating to matters impacting future obligations such as the balance deferred under the installment method at each future balance sheet date and changes in interest rates. However, based upon the estimated deferred balance as of December 31, 2015 and interest rates in effect as of the date of this Form 10-K filing, we estimate paying approximately $3.9 million in 453A interest during the year ended December 31, 2016. If no future RC facilities obtain investors, the deferred gain balance would decrease and interest payments, assuming no changes in the applicable interest rate, would also decrease throughout the periods in the table above.

Outstanding letters of credit were issued in connection with equipment sales agreements, collateral support for future royalty indemnity obligations and other items. A summary of the information related to our letters of credit is as follows:

	Total Outstanding As of December 31,		Expiration of Letters of Credit as of December 31, 2015			
(in thousands)	2015	2014	Less than 1 year	1-3 years	4-5 years	After 5 years
Letters of credit	$12,034	$11,625	$728	$5,156	$6,150	$ —

Additional information related to the letters of credit is included in Note 14 to our Consolidated Financial Statements, included in Item 8 of this Form 10-K.

Off-Balance Sheet Arrangements

Other than the operating leases, letters of credit and 453A interest obligations discussed in Note 14 of our Consolidated Financial Statements included elsewhere in this Form 10-K, we have no other material off-balance sheet arrangements as of December 31, 2015.

Critical Accounting Policies and Estimates

Our significant accounting policies are discussed in Note 1 to our Consolidated Financial Statements included elsewhere in this Form 10-K. In presenting our financial statements in conformity with accounting principles generally accepted in the U.S. ("U.S. GAAP"), we are required to make estimates and assumptions that affect the amounts reported therein. Several of the estimates and assumptions we are required to make relate to matters that are inherently uncertain as they pertain to future events. We base estimates on historical experience and other assumptions believed to be reasonable under the circumstances and evaluate these estimates on an ongoing basis. Actual results may differ from these estimates under different assumptions or conditions.

We believe that the accounting estimates discussed below are critical to understanding our historical and future performance, as these estimates relate to the more significant areas involving management's judgments and estimates.
Revenue Recognition
We recognize revenue when: (i) persuasive evidence of a customer arrangement exists; (ii) the price is fixed or determinable; (iii) collectability is reasonably assured; and (v) product delivery has occurred or services have been rendered and its probable that performance guarantees, if any, will be met.
Equipment sales
We enter into contracts that require, over a period of months, the design and construction of emissions control systems ("extended equipment contracts"). Revenue from such extended equipment contracts is recorded using the percentage of completion cost to cost method based on costs incurred to date compared with total estimated contract costs. However, if there is not sufficient information to estimate costs for extended equipment contracts, the completed contract method is used.
Under the completed contract method, revenues and costs from extended equipment contracts are deferred and recognized when contract obligations are substantially complete. The Company defines substantially complete as delivery of equipment and start-up at the customer site, and, as applicable to DSI systems, the completion of any major warranty service. Such costs are accumulated in the Costs in excess of billings on uncompleted contracts line item in the Consolidated Balance Sheets, and typically include direct materials, direct labor and subcontractor costs, and indirect costs related to contract performance, such as indirect labor, supplies, tools and repairs. For each of the years ended 2015, 2014 and 2013, we did not have sufficient information to measure ongoing percentage of completion using cost to cost method for our extended equipment contracts, accordingly, the completed contract method of revenue recognition has been used for each of these years and revenues and costs are deferred until the equipment is placed into service and contract obligations are substantially complete.
When multiple contracts exist with a single counterparty, we evaluate revenue recognition on a contract by contract basis. Provisions for estimated losses on uncompleted contracts are recognized when it has been determined that a loss is probable.
Costs of revenues include all labor, fringe benefits, subcontract labor, chemical and coal costs, materials, equipment, supplies, travel costs and any other costs and expenses directly related to the Company's production of revenue. To the extent that they occur, the Company recognizes estimated loss provisions related to contracts in the period that the potential loss is identified.
In addition, warranty costs for ACI equipment systems are estimated based on historical experience and are recorded as a percentage of revenue when the equipment is substantially complete. Warranty costs, comprised of the cost of replacement materials and direct labor, are included within the Equipment sales cost of revenue line of the Consolidated Statements of Operations.
Warranty costs for DSI equipment systems cannot be estimated due to a lack of historical experience manufacturing DSI systems and the resulting claims history, if any, needed to determine an appropriate warranty amount. Therefore, revenue recognition has been deferred until the end of the warranty period, generally 12 to 24 months following substantial completion. As warranty claims are incurred, such costs are deferred within the Costs in excess of billings on uncompleted contracts line item in the Consolidated Balance Sheets, until such time that revenue and cost of revenues are recognized.
Additional details related to long term equipment revenues are described in Note 1 of the Consolidated Financial Statements of this Form 10-K.
Performance Guarantee on Equipment Systems
In the normal course of business related to ACI and DSI systems, we may guarantee certain performance thresholds during a discrete performance testing period that does not extend beyond six months from the initial test date, the commencement of which is determined by the customer. Performance thresholds include such matters as the achievement of a certain level of mercury removal and other emissions based upon the injection of a specified quantity of a qualified AC or other chemical at a specified rate given other plant operating conditions, availability of equipment and electric power usage. In the event the equipment fails to perform as specified during the testing period, we may have an obligation to correct or replace the equipment. In the event the level of emissions removal is not achieved, we may have a "make right" obligation within the contract limits. Prior to the third quarter of 2015, we had

not incurred a performance guarantee claim. If incurred, guarantees are included within the Equipment sales cost of revenue line of the Consolidated Statements of Operations. The Company is currently working to modify and correct two performance guarantee issues related to emissions control ("EC") systems installed in 2015. Resolution of these performance guarantees is not expected to result in a material adverse effect on the Company’s operating performance or liquidity in 2016 or beyond. Resolution of these performance guarantees is not expected to result in a material adverse effect on the Company’s operating performance or liquidity in 2016 or beyond. However, the Company will not recognize any revenues related to these two contracts until the performance guarantee issues are resolved.

Additional details related to performance guarantees are described in Note 1 and Note 14 of the Consolidated Financial Statements of this Form 10-K.

Impairment of Equity Method Investments

Equity method investments at December 31, 2015 totaled $17.2 million, representing 28% of total assets. Our equity method investments are non-publicly traded ventures with other companies in businesses related to RC and are recorded at the carrying value of the investment. Equity investments are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of the investment may not be recoverable. In the event that a decline in fair value of an investment occurs, and the decline in value is considered to be other than temporary, an impairment loss is recognized. There were no indicators of impairment of equity method investments as of or during the years ended December 31, 2015, December 31, 2014 or December 31, 2013. Information related to our equity method investees is included in Note 7 of the Consolidated Financial Statements of this Form 10-K.

As of December 31, 2015, approximately $13.3 million of the $17.2 million carrying value of our equity method investments relates to our investment in RCM6. As noted above, we subsequently sold our 24.95% membership interest in RCM6 on March 3, 2016 for aggregate consideration that exceeds the carrying value of our investment. Accordingly, we have not recorded any impairment on our RCM6 investment as of or during the year ended December 31, 2015.

Settlement and Royalty Indemnification

The Settlement and royalty indemnification at December 31, 2015 totaled $20.3 million, representing 24% of total liabilities. The Settlement and royalty indemnification recorded at December 31, 2015 represents our estimate of the future obligations of the Company related to certain future revenues generated from a former equity method investment of the Company through the second quarter of 2018 as described in Note 2 and Note 14 of the Consolidated Financial Statements of this Form 10-K. Our estimate is based upon projections of future revenues subject to royalty indemnification payments. It is reasonably possible that future revenues subject to the royalty indemnification payments may be materially different from those currently projected and changes in estimates will impact our Consolidated Statements of Operations.

Share-Based Compensation Expense Related to Performance Stock Units ("PSU")

We grant certain executives of the Company PSU's that vest in equal installments over a period of three years subject to the grantee’s continuous service with the Company and the grant of performance share units . Each PSU represents a contingent right to receive shares of the Company’s common stock if the Company meets certain performance measures over the requisite period. Compensation expense is recognized for PSU awards on a straight-line basis over a three year service period based on the estimated fair value at the date of grant using a Monte Carlo simulation model. The Monte Carlo model determines the grant date fair value of the award based upon estimated company stock performance compared to the projected relative placement of the Company’s total stockholder return (“TSR”) for the award period with approximately 75% of the award based on the relative performance of the Company’s TSR performance compared to the respective TSR's of a specified group of peer companies and the remaining portion of the award based on the Company’s TSR performance compared to the Russell 3000 Index. Different Monte Carlo simulation results would result in a different grant date fair value and would impact the share-based compensation expense we would recognize over the award period in our Consolidated Statements of Operations. Refer to Note 13 of our Consolidated Financial Statements of this Form 10-K for additional information regarding our PSU awards.

Legal Proceedings

The Company is involved in certain legal actions. The outcomes of these legal actions are not within our control and may not be known for prolonged periods of time. In some actions, the claimants seek monetary damages and other penalties, which could require significant expenditures. In accordance with U.S. GAAP, we record a liability in our Consolidated Financial Statements for loss contingencies when a loss is known or considered probable and the amount can be reasonably estimated. If the reasonable estimate of a known or probable loss is a range, and no amount within the range is a better estimate than any other, the minimum amount of the range is accrued. If a loss is reasonably possible but not known or probable, and can be reasonably estimated, the estimated loss or range of loss is disclosed. Estimates of probable losses resulting from litigation and governmental proceedings involving the Company are inherently difficult to predict, particularly when the matters are in early procedural stages, with incomplete facts or legal discovery; involve unsubstantiated or indeterminate claims for damages; potentially involve penalties or fines; or could result in a change in business practice. We cannot predict with any certainty the final outcome of any legal proceedings as described in Note 14 of our Consolidated Financial Statements of this Form 10-K, and we cannot assure you that the ultimate resolution of any such matter will not have a material adverse effect on our consolidated financial position, results of operations, or cash flows. We have not recorded an expense related to losses in connection with unsettled legal matters as of December 31, 2015 because any potential loss was not then probable or reasonably estimable under U.S. GAAP. However, a change in this estimate could materially impact our Consolidated Statements of Operations. Refer to Note 14 of our Consolidated Financial Statements of this Form 10-K for additional information regarding legal matters.

Income Taxes

We account for income taxes as required by general accounting principles, under which management judgment is required in determining income tax expense and the related balance sheet amounts. This judgment includes estimating and analyzing historical and projected future operating results, the reversal of taxable temporary differences, tax planning strategies, and the ultimate outcome of uncertain income tax positions. Actual income taxes paid may vary from estimates, depending upon changes in income tax laws, actual results of operations, and the final audit of tax returns by taxing authorities. Tax assessments may arise several years after tax returns have been filed. Changes in the estimates and assumptions used for calculating income tax expense and potential differences in actual results from estimates could have a material impact on the Company's results of operations and financial condition.

Deferred tax assets and liabilities are determined on the basis of the differences between the financial statements and tax basis of assets and liabilities using enacted tax rates in effect for the year in which the differences are expected to reverse. The effect of a change in tax rates on deferred tax assets and liabilities is recognized in income in the period that includes the enactment date.

We recognize deferred tax assets to the extent that we believe these assets are more likely than not to be realized. In making such a determination, we consider all available positive and negative evidence, including future reversals of existing taxable temporary differences, projected future taxable income, tax-planning strategies, and results of recent operations.

We are currently in a tax net operating loss position in several jurisdictions in which we operate, including the U.S. federal jurisdiction, resulting in significant deferred tax assets. We establish a valuation allowance against our deferred tax assets when, based upon the weight of all available evidence, we believe it is more likely than not that some portion or all of the deferred tax assets will not be realized. As of December 31, 2015 and 2014, all existing deferred tax assets have been reduced to net asset values of zero via full valuation allowances. We have established these valuation allowances for our deferred tax assets that in our judgment will not be realized. In making this determination, we have considered our historical tax loss history as well as the relative impact of all of the available positive and negative evidence regarding future sources of taxable income and tax planning strategies. However, there could be material impact to our effective tax rate if there is a significant change in our judgment. If and when our judgment changes, then the valuation allowances are adjusted through the provision for income taxes in the period in which this determination is made. Refer to Note 16 of our Consolidated Financial Statements of this Form 10-K for additional information regarding our income tax provision.

Recently Issued Accounting Standards

Refer to Note 1 of our Consolidated Financial Statements of this Form 10-K for information regarding recently issued accounting standards.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

Interest Rate Risk

The Company is exposed to market risk from changes in interest rates. The Company’s assets include cash equivalents and restricted cash subject to variable interest rates. Restricted cash is required to provide collateral for certain letters of credit for ACI and DSI equipment projects, as well as for future payments related to royalty indemnification obligation payments as discussed in Note 14 of the Consolidated Financial Statements. As of December 31, 2015, $9.3 million of cash was earning interest at variable rates.

The Company is exposed to interest rate risk related to its obligations to pay 453A interest to the IRS. At December 31, 2015 the applicable 453A interest rate, which, per the applicable rules is rounded to the nearest full percentage to determine interest due, was 3.56%, which was rounded to 4.00%. A 10% proportionate increase in the applicable 453A interest rate would not have increased 453A interest expense during the year ended December 31, 2014.

The Company is also exposed to interest rate risk in connection with its Line of Credit, if amounts are drawn, which bears interest at a variable rate, which is the higher of 5% or the “Prime Rate” plus 1%. At December 31, 2015 the Prime Rate was 3.50% but no amounts were outstanding on the Line of Credit.

Using the December 31, 2015 cash balances, a 10% proportionate increase in short-term interest rates on an annualized basis compared to the actual interest rates as of December 31, 2015, and a corresponding and parallel shift in the remainder of the yield curve, would result in an increase to pretax income of $9 thousand. Conversely, a corresponding decrease in interest rates would result in a comparable change to pretax income. Actual interest rates could change significantly more than 10%. There are inherent limitations in the sensitivity analysis presented, primarily due to the assumption that interest rate movements are linear and instantaneous. As a result, the analysis is unable to reflect the potential effects of more complex market changes that could arise, which may positively or negatively affect income.

Due to the significance of the Company's equity method investments, the Company is also exposed to interest rate risk dependent upon the composition of the individual balance sheets of the Company's investees.

Foreign Currency Risk

The Company is exposed to changes in currency rates as a result of its investments in foreign operations. U.S. dollars needed for payments due in foreign currencies will increase or decrease compared to prior periods as a result of changes in foreign currency exchange rates. The Company does not expect that such exposure would result in any material gains or losses from foreign currency transactions completed in the normal course of business.

Commodity Price Risk

In the normal course of our business, we are exposed to market risk or price fluctuations related to the goods we procure related to our revenue-producing activities. Components of ACI and DSI systems, which are or may be significant to such revenue producing activities, have market prices that fluctuate regularly, but not widely. We do not engage in commodity hedging transactions for raw materials, though we have committed and will continue to commit to purchase certain materials for specified periods of time. Significant increases in the prices of our products due to increases in the cost of goods could have a negative effect on demand for products and on profitability. However, to mitigate risk related to price fluctuations, commodity purchases are made concurrently with contracts being awarded. Therefore, the cost of significant price increases would likely be able to be materially passed on to the customer.

Item 8. Financial Statements and Supplementary Data

Advanced Emissions Solutions, Inc.
Index to Financial Statements
Advanced Emissions Solutions, Inc.
Consolidated Financial Statements:

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Stockholders
Advanced Emissions Solutions, Inc. and Subsidiaries

We have audited the accompanying consolidated balance sheets of Advanced Emissions Solutions, Inc. and subsidiaries as of December 31, 2015 and 2014, and the related consolidated statements of operations, stockholders' deficit, and cash flows for each of the three years in the period ended December 31, 2015. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of Advanced Emissions Solutions, Inc. and subsidiaries as of December 31, 2015 and 2014, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2015, in conformity with U.S. generally accepted accounting principles.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), Advanced Emissions Solutions, Inc. and subsidiaries' internal control over financial reporting as of December 31, 2015, based on criteria established in Internal Control - Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission in 2013. Our report dated April 19, 2016 expressed an opinion that Advanced Emissions Solutions, Inc. and subsidiaries had not maintained effective internal control over financial reporting as of December 31, 2015, based on criteria established in Internal Control - Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission in 2013.

/s/ Hein & Associates LLP

Denver, Colorado
April 19, 2016

Advanced Emissions Solutions, Inc. and Subsidiaries
Consolidated Balance Sheets

	As of December 31,	
(in thousands, except share data)	2015	2014
ASSETS		
Current assets:		
Cash and cash equivalents	$9,265	$25,181
Receivables, net	8,361	16,594
Receivables, related parties, net	1,918	1,439
Restricted cash	728	2,527
Costs in excess of billings on uncompleted contracts	2,137	6,153
Prepaid expenses and other assets	2,306	2,535
Total current assets	24,715	54,429
Restricted cash, long-term	10,980	8,771
Property and equipment, net of accumulated depreciation of $4,557 and $5,924, respectively	2,040	4,808
Investment securities, restricted, long-term	336	336
Cost method investment	2,776	2,776
Equity method investments	17,232	19,584
Other assets	2,696	2,995
Total Assets	$60,775	$93,699
LIABILITIES AND STOCKHOLDERS' DEFICIT		
Current liabilities:		
Accounts payable	$6,174	$7,514
Accrued payroll and related liabilities	5,800	5,158
Current portion of notes payable, related parties	1,837	1,479
Billings in excess of costs on uncompleted contracts	9,708	22,518
Short-term borrowings	12,676	—
Settlement and royalty indemnity obligation	6,502	3,749
Other current liabilities	6,198	6,739
Total current liabilities	48,895	47,157
Long-term portion of notes payable, related parties	13,512	14,431
Settlement and royalty indemnification, long-term	13,797	20,273
Advance deposit, related party	2,980	6,524
Other long-term liabilities	6,569	6,011
Total Liabilities	85,753	94,396
Commitments and contingencies (Note 14)		
Stockholders' deficit:		
Preferred stock: par value of $.001 and no par value per share, respectively, 50,000,000 shares authorized, none outstanding	—	—
Common stock: par value of $.001 per share, 100,000,000 shares authorized, 21,943,872 and 21,853,263 shares issued and 21,809,164 and 21,643,342 shares outstanding at December 31, 2015 and 2014, respectively	22	22
Additional paid-in capital	116,029	110,169
Accumulated deficit	(141,029)	(110,888)
Total stockholders' deficit	(24,978)	(697)
Total Liabilities and Stockholders' Deficit	$60,775	$93,699

See Notes to the Consolidated Financial Statements.

Advanced Emissions Solutions, Inc. and Subsidiaries
Consolidated Statements of Operations

	Years Ended December 31,		
(in thousands, except per share data)	2015	2014	2013
Revenues:			
Equipment sales	$60,099	$12,044	$5,747
Consulting services	1,752	4,488	6,790
Chemicals and other	888	391	749
Total revenues	62,739	16,923	13,286
Operating expenses:			
Equipment sales cost of revenue, exclusive of depreciation and amortization	45,433	9,277	9,459
Consulting services cost of revenue, exclusive of depreciation and amortization	1,518	2,203	3,827
Chemical and other cost of revenue, exclusive of depreciation and amortization	601	140	382
Payroll and benefits	23,589	20,767	16,228
Rent and occupancy	3,309	2,468	2,128
Legal and professional fees	16,604	14,430	4,534
General and administrative	6,104	6,066	4,101
Research and development, net	5,362	1,521	3,237
Depreciation and amortization	2,019	1,865	1,648
Total operating expenses	104,539	58,737	45,544
Operating loss	(41,800)	(41,814)	(32,258)
Other income (expense):			
Earnings from equity method investments	8,921	42,712	15,502
Royalties, related party	10,642	6,410	2,505
Interest income	24	74	109
Interest expense	(8,402)	(5,725)	(1,338)
Other	494	26	(44)
Total other income (expense), net	11,679	43,497	16,734
Income (loss) before income tax expense	(30,121)	1,683	(15,524)
Income tax expense	20	296	463
Net income (loss)	$(30,141)	$1,387	$(15,987)
Earnings (loss) per common share (Note 1):			
Basic	$(1.37)	$0.06	$(0.78)
Diluted	$(1.37)	$0.06	$(0.78)
Weighted-average number of common shares outstanding:			
Basic	21,773	21,554	20,103
Diluted	21,773	22,079	20,103

See Notes to the Consolidated Financial Statements.

Advanced Emissions Solutions, Inc. and Subsidiaries
Consolidated Statements of Changes in Stockholders' Deficit
For the Years Ended December 31, 2015, 2014 and 2013

	Common Stock				
(in thousands, except share data)	Shares	Amount	Additional Paid-in Capital	Accumulated Deficit	Total Stockholders' Deficit
Balances, January 1, 2013	20,113,612	$ 20	$ 74,812	$ (96,288)	$ (21,456)
Stock-based compensation	70,420	1	2,312	—	2,313
Issuance of stock to 401(k) plan	38,296	—	603	—	603
Issuance of stock upon exercise of options, net	54,376	—	354	—	354
Reclassification and settlement of equity awards	—	—	(991)	—	(991)
Issuance of stock to settle liabilities	5,204	—	81	—	81
Issuance of stock for cash	1,380,000				