UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, DC 20549

FORM 10-K

☑ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the fiscal year ended December 31, 2016

or

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

Commission file number 001-36103

TECOGEN INC.

(Exact name of Registrant as specified in its charter)

Delaware	04-3536131
(State or Other Jurisdiction of Incorporation or Organization)	*(IRS Employer Identification No.)*
45 First Avenue Waltham, Massachusetts	02451
(Address of Principal Executive Offices)	*(Zip Code)*

Registrant's Telephone Number, Including Area Code: (781) 466-6400

Securities registered pursuant to Section 12(b) of the Exchange Act:

Title of each class	Name of each exchange on which registered
Common Stock, $.001 par value	NASDAQ Capital Market

Securities registered pursuant to Section 12(g) of the Exchange 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 ☐ No ☒

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐ 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. 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 (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes ☒ No ☐

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of the registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or an 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 the definitions of "large accelerated filer", "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check one): Large accelerated filer ☐ Accelerated filer ☐ 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 ☐ No ☒

As of June 30, 2016, the last day of the registrant's most recently completed second fiscal quarter, the aggregate market value of the voting and non-voting common equity held by non-affiliates was: $54,992,061. Solely for purposes of this disclosure, shares of common stock held by executive officers and directors of the registrant as of such date have been excluded because such persons may be deemed to be affiliates. This determination of executive officers and directors as affiliates is not necessarily a conclusive determination for any other purposes.

As of March 21, 2017, 20,043,052 shares of common stock, $.001 par value per share, of the registrant were issued and outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Certain information required for Part III of this Annual Report on Form 10-K is incorporated by reference to the Tecogen Inc. definitive proxy statement for its 2017 Annual Meeting of Stockholders, which shall be filed with the Securities and Exchange Commission pursuant to Regulation 14A of the Securities Exchange Act of 1934, as amended, within 120 days following the registrant's fiscal year ended December 31, 2016.

CAUTIONARY NOTE CONCERNING FORWARD-LOOKING STATEMENTS

THIS ANNUAL REPORT ON FORM 10-K CONTAINS FORWARD-LOOKING STATEMENTS WITHIN THE MEANING OF THE PRIVATE SECURITIES LITIGATION REFORM ACT OF 1995 AND OTHER FEDERAL SECURITIES LAWS. THESE FORWARD-LOOKING STATEMENTS ARE BASED ON OUR PRESENT INTENT, BELIEFS OR EXPECTATIONS, AND ARE NOT GUARANTEED TO OCCUR AND MAY NOT OCCUR. ACTUAL RESULTS MAY DIFFER MATERIALLY FROM THOSE CONTAINED IN OR IMPLIED BY OUR FORWARD-LOOKING STATEMENTS AS A RESULT OF VARIOUS FACTORS.

WE GENERALLY IDENTIFY FORWARD-LOOKING STATEMENTS BY TERMINOLOGY SUCH AS “MAY,” “WILL,” “SHOULD,” “EXPECTS,” “PLANS,” “ANTICIPATES,” “COULD,” “INTENDS,” “TARGET,” “PROJECTS,” “CONTEMPLATES,” “BELIEVES,” “ESTIMATES,” “PREDICTS,” “POTENTIAL” OR “CONTINUE” OR THE NEGATIVE OF THESE TERMS OR OTHER SIMILAR WORDS. THESE STATEMENTS ARE ONLY PREDICTIONS. THE OUTCOME OF THE EVENTS DESCRIBED IN THESE FORWARD-LOOKING STATEMENTS, INCLUDING, WITHOUT LIMITATION, THE PROPOSED ACQUISITION OF AMERICAN DG ENERGY, INC. IS SUBJECT TO KNOWN AND UNKNOWN RISKS, UNCERTAINTIES AND OTHER FACTORS THAT MAY CAUSE OUR, OUR CUSTOMERS’ OR OUR INDUSTRY’S ACTUAL RESULTS, LEVELS OF ACTIVITY, PERFORMANCE OR ACHIEVEMENTS EXPRESSED OR IMPLIED BY THESE FORWARD-LOOKING STATEMENTS TO DIFFER.

THIS REPORT ALSO CONTAINS MARKET DATA RELATED TO OUR BUSINESS AND INDUSTRY. THESE MARKET DATA INCLUDE PROJECTIONS THAT ARE BASED ON A NUMBER OF ASSUMPTIONS. IF THESE ASSUMPTIONS TURN OUT TO BE INCORRECT, ACTUAL RESULTS MAY DIFFER FROM THE PROJECTIONS BASED ON THESE ASSUMPTIONS. AS A RESULT, OUR MARKETS MAY NOT GROW AT THE RATES PROJECTED BY THESE DATA, OR AT ALL. THE FAILURE OF THESE MARKETS TO GROW AT THESE PROJECTED RATES MAY HAVE A MATERIAL ADVERSE EFFECT ON OUR BUSINESS, RESULTS OF OPERATIONS, FINANCIAL CONDITION AND THE MARKET PRICE OF OUR COMMON STOCK.

SEE “ITEM 1A. RISK FACTORS,” “ITEM 7. MANAGEMENT’S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS” AND “ITEM 1. BUSINESS,” AS WELL AS OTHER SECTIONS IN THIS REPORT, THAT DISCUSS SOME OF THE FACTORS THAT COULD CONTRIBUTE TO THESE DIFFERENCES. THE FORWARD-LOOKING STATEMENTS MADE IN THIS ANNUAL REPORT ON FORM 10-K RELATE ONLY TO EVENTS AS OF THE DATE OF WHICH THE STATEMENTS ARE MADE. EXCEPT AS REQUIRED BY LAW, WE UNDERTAKE NO OBLIGATION TO UPDATE OR RELEASE ANY FORWARD- LOOKING STATEMENTS AS A RESULT OF NEW INFORMATION, FUTURE EVENTS OR OTHERWISE.

ANNUAL REPORT ON FORM 10-K

FOR THE FISCAL YEAR ENDED DECEMBER 31, 2016

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Item 1. Business

The Company

Tecogen® Inc. (“Tecogen,” the “Company,” “we,” “our,” or “us”) was incorporated in the State of Delaware on September 15, 2000. Our principal executive offices are located at 45 First Avenue, Waltham, Massachusetts 02451 and our telephone number is (781) 446-6400. The Company designs, manufactures, markets, and maintains high efficiency, ultra-clean cogeneration products including natural gas engine-driven combined heat and power, air conditioning systems, and water heaters for residential, commercial, recreational and industrial use. The Company is known for cost efficient, environmentally friendly and reliable products for distributed power generation that, through patented technology, nearly eliminate criteria pollutants and significantly reduce a customer’s carbon footprint.

The Company’s history dates to the early 1960s when it served as the Research and Development New Business Center of Thermo Electron Corporation, now Thermo Fisher Scientific Inc. For the next two decades, this group performed fundamental and applied research in many energy-related fields to develop new technologies. In 1982, the Research and Development group released its first major product, a 60-kilowatt (kW) cogenerator. In the late 1980s and early 1990s, air-conditioning and refrigeration products using the same gas engine-driven technology were introduced. In 1987, Tecogen was spun out as a separate entity by Thermo Electron and, in 1992, became a division of the newly formed Thermo Power Corporation. In 2000, Thermo Power Corporation was dissolved, and Tecogen was sold to a group of private investors including the Company's Co-CEO, John N. Hatsopoulos.

In 2009, Tecogen created a subsidiary, Ilios® Inc., a Delaware corporation (“Ilios”), to develop and distribute a line of high-efficiency heating products, starting with a water heater. We believe that these products are much more efficient than the conventional boilers traditionally used in commercial buildings and industrial processes (see “Our Products” below).

In December 2015, the Company entered into a joint venture agreement with a group of European strategic investors relating to the formation of Ultra Emissions Technologies Ltd. (“Ultra Emissions”), organized under the laws of the Island of Jersey, Channel Islands, a joint venture company. Ultra Emissions was organized to develop and commercialize Tecogen’s patented technology, Ultera ®, for the automotive market. The technology is designed to reduce harmful emissions generated by engines using fossil fuels. Tecogen contributed an exclusive license for use of Ultera in the automotive space to the joint venture, and the strategic partners have committed to financing the initial research, development and testing of a viable product. See “Our Products - Ultera Low-Emissions Technology” below for a more in depth discussion of the Ultra emissions opportunity. Although Tecogen originally owned 50% of the joint venture, due to investment by outside investors, as of December 31, 2016, Tecogen’s ownership interest is 43%. See Note 13 to the Company’s Consolidated Financial Statements for the year ended December 31, 2016.

Recent Developments

In April 2016 pursuant to share exchange agreements, holders of the non-controlling interest in Ilios agreed to exchange every 7.86 of their restricted Ilios shares of common stock for 1 share of the Company's common stock. In addition, the Company granted each exchanging shareholder registration rights with respect to the Company's common stock such shareholder received in exchange for such shareholder's Ilios shares. Thereafter, the Company effected a statutory merger of Tecogen and Ilios. Ilios remains a brand name for our line of heat pump products.

In May 2016, Tecogen entered into a joint venture agreement, (the "JV Agreement") with Tedom a.s., a European combined heat and power product manufacturer incorporated in the Czech Republic ("Tedom") and Tedom’s subsidiary, Tedom USA, Inc., a Delaware corporation. Pursuant to the JV Agreement, the parties formed TTcogen LLC, a Delaware limited liability company (“TTcogen”), through which the joint venture is operated. TTcogen offers Tedom's line of Combined Heat and Power ("CHP") products to the United States via Tecogen's nationwide sales and service network consisting of 27 CHP modules ranging in size from 35 kW up to 4 MW and fully capable of running on a variety of fuel feedstocks (including natural gas, propane, and biofuel).

Proposed Acquisition of American DG Energy, Inc.

On November 1, 2016, Tecogen and Tecogen.ADGE Acquisition Corp., a Delaware corporation and wholly-owned subsidiary of Tecogen (“Merger Sub”) formed for the purpose of effecting the merger, entered into an Agreement and Plan of Merger (the “Merger Agreement”) with American DG Energy, Inc., a Delaware corporation (“ADGE”). Pursuant to the Merger Agreement, the Merger Sub will be merged with and into ADGE (the “Merger”), with ADGE continuing as the surviving company in the Merger. Following the Merger, ADGE will become a wholly-owned subsidiary of Tecogen. The Merger Agreement sets forth the terms and conditions of the proposed acquisition of ADGE.

Subject to the terms and conditions set forth in the Merger Agreement, at the effective time of the Merger, each share of ADGE common stock, $.001 par value per share, issued and outstanding immediately prior to the effective time of the Merger will be converted into the right to receive 0.092 shares of Tecogen common stock, $.001 par value per share (the “Exchange Ratio”). The Exchange Ratio may be subject to adjustment in the event of any stock split, reverse stock split, stock dividend, recapitalization, reclassification, combination, exchange of shares or other similar event with respect to the number of ADGE’s or Tecogen's shares outstanding after the date of the Merger Agreement and prior to the effective time of the Merger. Options to acquire ADGE shares of common stock and restricted stock awards with respect to ADGE shares of common stock granted before the effective time of the Merger will remain in effect until they expire or are terminated and shall be exercisable for or relate to a number of shares of common stock of Tecogen equal to the Exchange Ratio, as adjusted.

The Merger Agreement contains customary representations and warranties of Tecogen and ADGE relating to the respective businesses and public filings of Tecogen and ADGE. In addition, the Merger Agreement provides for customary pre-closing covenants of Tecogen and ADGE, including covenants relating to conducting the respective businesses of Tecogen and ADGE in all material respects in the ordinary course of business in accordance with past practice and to use commercially reasonable efforts to maintain in all material respects Tecogen's and ADGE's assets and properties in their current condition.

Prior to the receipt of the approval of the Merger Agreement by the stockholders of both Tecogen and ADGE, the Merger Agreement may be terminated and the Merger may be abandoned by either Tecogen or ADGE pursuant to a resolution of its respective board of directors to withdraw or fail to make when required under the Merger Agreement, propose publicly to withdraw or fail to make or include in the joint proxy statement/prospectus for the Merger, a recommendation that its stockholders vote in favor of the Merger or, in the case of ADGE, may terminate the Merger Agreement in the event its board approves, recommends or declares advisable, or proposes publicly to approve, recommend or declare advisable a competing proposal or offer by a third party to purchase 20% or more of the assets or outstanding capital stock, other equity securities, or voting power, of ADGE, or any merger, business combination, consolidation, share exchange, recapitalization or similar transaction as a result of which the holders of its common stock immediately prior to the transaction do not own at least 80% of the outstanding voting power of the surviving or resulting entity in such transaction after the consummation of the transaction ("competing proposal"). The foregoing is subject to compliance with written notice of termination and the furnishing of the reasons for such termination. In the event of a termination, there shall be no liability on the part of the terminating party to the other party or parties except in the case of fraud, gross negligence, or willful misconduct.

The Merger Agreement does not provide for the payment by ADGE or Tecogen of a breakup or termination fee in the event of such a termination.

Also, the Merger Agreement contains a "go shop" provision, pursuant to which, following the date of the Merger Agreement and prior to the receipt of the approval of the Merger by ADGE's and Tecogen's stockholders, ADGE and its officers, directors, employees, financial and other advisors may initiate or solicit a competing proposal.

Further, the Merger Agreement provides that at any time before the closing of the Merger, either ADGE's or Tecogen's board of directors may terminate the Merger Agreement if such board (or a committee of such board) has determined in good faith, after consultant with its financial advisors and legal counsel ("advisors"), that there is a reasonable probability the failure to take such action would cause the board of ADGE or Tecogen, as the case may be, the violate its fiduciary duties to its stockholders under applicable law. The Merger Agreement requires the terminating company to provide ten days' prior written notice; the terminating company (or its representative) is required to negotiate in good faith with the other party during the five business day period after giving such notice to the extent such other party wishes to negotiate and, in the case of a termination by ADGE's board, and to the extent Tecogen wishes to negotiate, to enable Tecogen to propose in writing a binding offer to effect revisions to the terms of the Merger Agreement that would obviate the need for a termination by ADGE, and, in the case of a termination by the board of Tecogen, to enable both companies to agree to revisions to the terms of the Merger Agreement that would obviate the need for a termination by Tecogen. At the end of the notice period, the terminating company's board (or committee), is required to have considered in good faith any such binding offer, and to have determined in good faith, after consultation with its advisors, that there is a reasonable probability the failure to effect the termination would cause such board to violate its fiduciary duties to its stockholders under applicable law. In the event of such a termination by either there shall be no liability on the part of the terminating party to the other party or parties except in the case of fraud, gross negligence, or willful misconduct.

Consummation of the Merger is subject to a number of customary conditions including, among others, conditions relating to the approval of the Merger by the requisite vote of the stockholders of Tecogen and ADGE, the receipt of all required regulatory approvals, and the effectiveness of a registration statement on Form S-4 of Tecogen related to the Merger.

In connection with the proposed Merger, on December 21, 2016, Tecogen filed a registration statement on Form S-4 (the "Registation Statement") with the SEC and, on January 27, 2017, filed an Amendment No. 1 to the Registration Statement. The Registration Statement relates to the registration of the shares of common stock of Tecogen to be issued in the Merger and includes a joint proxy statement/prospectus pursuant to which Tecogen and ADGE will solicit the votes of their respective stockholders for the approval of the Merger at separate special meetings of such stockholders. Tecogen and ADGE expect to make the joint proxy statement/prospectus available to their respective stockholders and to file other documents regarding the proposed Merger with the SEC, including one or more further amendments to the Registration Statement. This Annual Report is not intended to be, and is not, a substitute for such filings or for any other document that Tecogen or ADGE may file with the SEC in connection with the proposed Merger. Stockholders of Tecogen are urged to read all relevant documents filed with the SEC, including the effective registration statement and the joint proxy statement/prospectus contained therein carefully when they become available, because they will contain important information about Tecogen, ADGE, and the proposed Merger. Investors and security holders will be able to obtain copies of the definitive joint proxy statement/prospectus as well as other filings containing information about Tecogen, ADGE, and the Merger once they become available, without charge, at the SEC's website at http://www.sec.gov. Copies of documents filed with the SEC by Tecogen will be made available free of charge on Tecogen's investor relations website at http://ir.tecogen.com/all-sec-filings. The information on Tecogen's web site is not incorporated by reference into this annual report on Form 10-K.

Litigation Related to the Proposed Merger

Massachusetts Superior Court Action

On or about February 6, 2017, ADGE, John Hatsopoulos, George N. Hatsopoulos, Charles T. Maxwell, Deanna M. Petersen, Christine Klaskin, John Rowe, Joan Giacinti, Elias Samaras, Tecogen, and Merger Sub were served with a verified complaint by William C. May, individually and on behalf of the other shareholders of ADGE as a class. The complaint alleges the proposed Merger is subject to certain conflicts of interest; that the registration statement on Form S-4 contained material omissions; that Tecogen aided and abetted ADGE's board's breaches of its fiduciary duties; and other claims. The plaintiff is seeking preliminary and permanent injunctions related to the Merger, rescissory damages, compensatory damages, accounting, and other relief.

For the description of a lawsuit filed in the United States District Court, but as to which no service of process has been effected, see "Business - Litigation."

Business Overview

Tecogen designs, manufactures, markets, and maintains high efficiency, ultra-clean cogeneration products including natural gas engine-driven combined heat and power, air conditioning systems, and water heaters for residential, commercial, recreational and industrial use. The company is known for cost efficient, environmentally friendly and reliable products for distributed power generation that, through patented technology, nearly eliminate criteria pollutants and significantly reduce a customer's carbon footprint.

Tecogen's natural gas powered cogeneration systems (also known as combined heat and power or "CHP") are efficient because they drive electric generators or compressors, which reduce the amount of electricity purchased from the utility while recovering the engine's waste heat for water heating, space heating, and/or air conditioning at the customer's building.

Tecogen manufactures three types of CHP products:

- Cogeneration units that supply electricity and hot water including the InVerde® 100, InVerde e+®, CM-75 and CM-60;
- Chillers that provide air-conditioning and hot water marketed under the TECOCHILL® brand name; and
- Ilios® branded high-efficiency water heaters.

All of these are standardized, modular, CHP products that reduce energy costs, carbon emissions, and dependence on the electric grid. Tecogen's products allow customers to produce power on-site in parallel with the electric grid, or stand alone when no utility grid is available via inverter-based black-start capability. Because our CHP systems also produce clean, usable heat energy, they provide economic advantages to customers who can benefit from the use of hot water, chilled water, air conditioning and heating.

Traditional customers for our cogeneration and chiller systems include hospitals and nursing homes, schools and universities, health clubs and spas, hotels and motels, office and retail buildings, food and beverage processors, multi-unit residential buildings, laundries, ice rinks, swimming pools, factories, municipal buildings, and military installations; however, the economic feasibility of using our systems is not limited to these customer types. Market drivers include the price of natural gas, local electricity rates, environmental regulations, and governmental energy policies, as well as customers' desire to become more environmentally responsible.

Through our factory service centers in California, Connecticut, Massachusetts, Michigan, New Jersey, and New York our specialized technical staff maintain our products via long-term service contracts. The Company has shipped over 2,500 units, some of which have been operating for almost 25 years.

Our CHP technology uses low-cost, mass-produced engines, which we modify to run on natural gas. In the case of our mainstay cogeneration and chiller products, the engines have proven to be cost-effective and reliable. In 2009, in response to the changing regulatory requirements for stationary engines, our research team developed an economically feasible process for removing air pollutants from the engine exhaust. This technology's U.S. and foreign patents were granted beginning in October 2013 with other domestic and foreign patents granted or applications pending. Branded Ultera®, the ultra clean emissions technology, repositions our engine driven products in the marketplace, making them comparable environmentally with other technologies such as fuel cells, but at a much lower cost and greater efficiency. Because of this breakthrough design for emission control, our natural gas-fueled CHP modules fitted with the patented Ultera control technology are certified by the California Air Resources Board ("CARB") as meeting its stringent 2007 emissions requirements, the same emissions standard used to certify fuel cells, and the same emissions levels as a state-of-the-art central power plant. We now offer our Ultera emissions control technology as an option on all our products or as a stand-alone application for the retrofitting of other rich-burn spark-ignited reciprocating internal combustion engines.

Tecogen products are designed as compact modular units that are intended to be installed in multiples when utilized in larger CHP plants. The majority of our CHP modules are installed in multi-unit sites with applications ranging up to 12 units. This approach has significant advantages over utilizing single larger units, allowing building placement in constrained urban settings and redundancy to mitigate service outages. Redundancy is particularly relevant in regions where the electric utility has formulated tariff structures that include high "peak demand" charges. Such tariffs are common in many areas of the country, and are applied by such utilities as Southern California Edison, Pacific Gas and Electric, Consolidated Edison of New York, and National Grid of Massachusetts. Because these tariffs are assessed based on customers' peak monthly demand charge over a very short interval, typically only 15 minutes, a brief service outage for a system comprised of a single unit can create a high demand charge, and therefore be highly detrimental to the monthly savings of the system. For multiple unit sites, the likelihood of a full system outage that would result in a high demand charge is dramatically reduced, so consequently, these customers have a greater probability of capturing peak demand savings.

Our CHP products are sold directly to customers by our in-house marketing team, and by established sales agents and representatives, including ADGE.

Our Products

We manufacture natural gas engine-driven cogeneration systems, heat pumps, and chillers, all of which are CHP products that deliver more than one form of energy. Our cogeneration products are all standard, modular units that come pre-packaged from the Company's factory for ease of installation at a customer's site. The package incorporates the engine, generator, heat-recovery equipment, system controls, electrical switchgear, emission controls, and a data controller for remote monitoring and data transmission; minimizing the cost and complexity of installing the equipment at a site. This packaged, modular system simplifies CHP technology for small to mid-sized customers who typically are less experienced with the implementation and benefits of a CHP system.

All of our cogeneration systems and most of our chillers use the same engine, the TecoDrive 7400 model. This is an engine modified by us to use natural gas fuel. The small 25-ton chiller uses a similar engine, the 3000 model. We worked closely with the engine manufacturers and the gas industry (including the Gas Research Institute) in the 1980s and 1990s to modify the engine and validate its durability. For the Ilios water heater, we introduced a technologically advanced Ford engine that is enhanced for industrial applications.

Our commercial product line includes:

- the InVerde®, InVerde e+®, TECOGEN® and TTcogen cogeneration units;
- TECOCHILL® chillers;
- Ilios® high-efficiency water heaters; and
- Ultera® emissions control technology.

InVerde Cogeneration Units

Our premier cogeneration product is the InVerde, a 100-kW CHP system that not only provides electricity and hot water, but also satisfies the growing customer demand for operation during a utility outage, commonly referred to as "black-start" capability. Our exclusively licensed microgrid technology (see "Intellectual Property" below) enables our InVerde CHP products to provide backup power in the event of power outages that may be experienced by local, regional, or national grids.

The InVerde incorporates an inverter, which converts direct current, or DC, electricity to alternating current, or AC. With an inverter, the engine and generator can run at variable speeds, which maximizes efficiency at varying loads. The inverter then converts the generator's variable output to the constant-frequency power required by customers in 50 or 60 Hertz.

This inverter technology was developed originally for solar and wind power generation. The Company believes that the InVerde is the first commercial engine-based CHP system to use an inverter. Electric utilities accept inverter technology as "safe" by virtue of its certification to the Underwriters Laboratory interconnection standard 1741. InVerde earned this certification. This qualifies our product for a much simpler permitting process nationwide and is mandatory in some areas such as New York City and California, a feature we consider to be a competitive advantage. The inverter also improves the CHP system's efficiency at partial load, when less heat and power are needed by the customer.

The InVerde`s black-start feature addresses a crucial demand from commercial and institutional customers who are increasingly concerned about utility grid blackouts and brownouts, natural disasters, security threats, and antiquated utility infrastructure. Multiple InVerde units can operate collectively as a stand-alone microgrid, which is a group of interconnected loads served by one or more power sources. The InVerde is equipped with software that allows a cluster of units to seamlessly share the microgrid load without complex controls; a proprietary cost advantage for multiple modules at a single location.

The InVerde CHP system was developed in 2007 and began shipping in 2008. Our largest InVerde installation utilizes 12 units, which supply 1.2 MW of on-site power and about 8.5 million Btu/hr of heat (700,000 Btu/hr per unit).

In January 2016, the Company launched its newest edition to the InVerde line, the InVerde e+. The e+ builds on the success of the first generation InVerde and reinforces our goal to be at the forefront of the industry, providing our customers with the most advanced clean energy technologies available in the marketplace. Among the most differentiating features when compared to competitive CHP technology are that the InVerde e+ offers: best in class electrical efficiency; a DC input option for solar or battery array integration; rapid 10 second black-start; and requires just 4 inches of water column gas pressure which eliminated the need for additional costly pressure boosting equipment, unlike its competitors.

TECOGEN Cogeneration Units

The TECOGEN cogeneration system is the original model introduced in the 1980s; available in sizes of 60 kW and 75 kW and capable of producing up to 500,000 Btu/hr of hot water. This technology is based on a conventional single-speed generator. It is meant only for grid-connected operation and is not universally accepted by utilities for interconnection, in contrast to the InVerde. Although this cogeneration product has the longest legacy and largest installed population, much of its production volume has been supplanted by the InVerde and its broader array of product features.

TECOCHILL Chillers

Our TECOCHILL natural gas engine-driven chillers are available in capacities ranging from 25 to 400 tons, with the smaller units air-cooled and the larger ones water-cooled. Using technology first developed in 1987, the engine drives a compressor that makes chilled water, while the engine's free waste heat can be recovered to satisfy the building's needs for heat or hot water. This process is sometimes referred to as "mechanical" cogeneration, as it generates no electrical power, and the equipment does not have to be connected to the utility grid.

A gas-fueled chiller provides enough air conditioning to avoid most of the utility's seasonal peak charges for electric usage and capacity. In summer when electric rates are at their highest, natural gas is "off-peak" and quite affordable, allowing TECOCHILL customers to avoid typically higher summer-time "peak-usage" electric rates. Gas-fueled chillers also free up the building's existing electrical capacity to use for other loads and can operate on minimal electric load in case of electric grid blackout; a key feature for customers concerned about load demand on backup power generators.

Ilios High-Efficiency Water Heaters

Tecogen has developed several heat pumps under the Ilios brand name including a High Efficiency ("HE") Air-Source Water Heater, HE Water-Sourced Water Heater, and HE Air-Sourced "Split System" Water Heater. Our water heater products operate like an electric heat pump but use a natural gas engine instead of an electric motor to power the system. The Ilios high-efficiency water heater uses a heat pump, which captures warmth from outdoor air even if it is moderately cool outside. Heat pumps work somewhat like a refrigerator, but in reverse. Refrigerators extract heat from inside the refrigerator and move it outside the refrigerator while heat pumps extract heat from outside and move it indoors.

The gas engine's waste heat is recovered and used in the process, unlike its electric counterpart, which runs on power that has already lost its waste heat. This means that the heat being captured from outdoors is supplemented by the engine's waste heat, which increases the efficiency of the process. The net effect is that an Ilios heat pump's efficiency far surpasses that of conventional boilers for water heating; gas engine heat pumps can deliver efficiencies in excess of 200%.

Similarly, if used for space heating, the engine-powered heat pump is more efficient than an electric heat pump, again because heat is recovered and used for other building processes. The product's higher efficiency translates directly to lower fuel consumption and, for heavy use customers, significantly lowers operating costs when compared with conventional equipment.

In 2013, a water-sourced model of the heat pump was added to our product line. This heat pump captures heat from a water source such as a geothermal well or from a pre-existing chilled water loop in the facility; the latter configuration provides simultaneous heating and cooling benefits, doubling the effect.

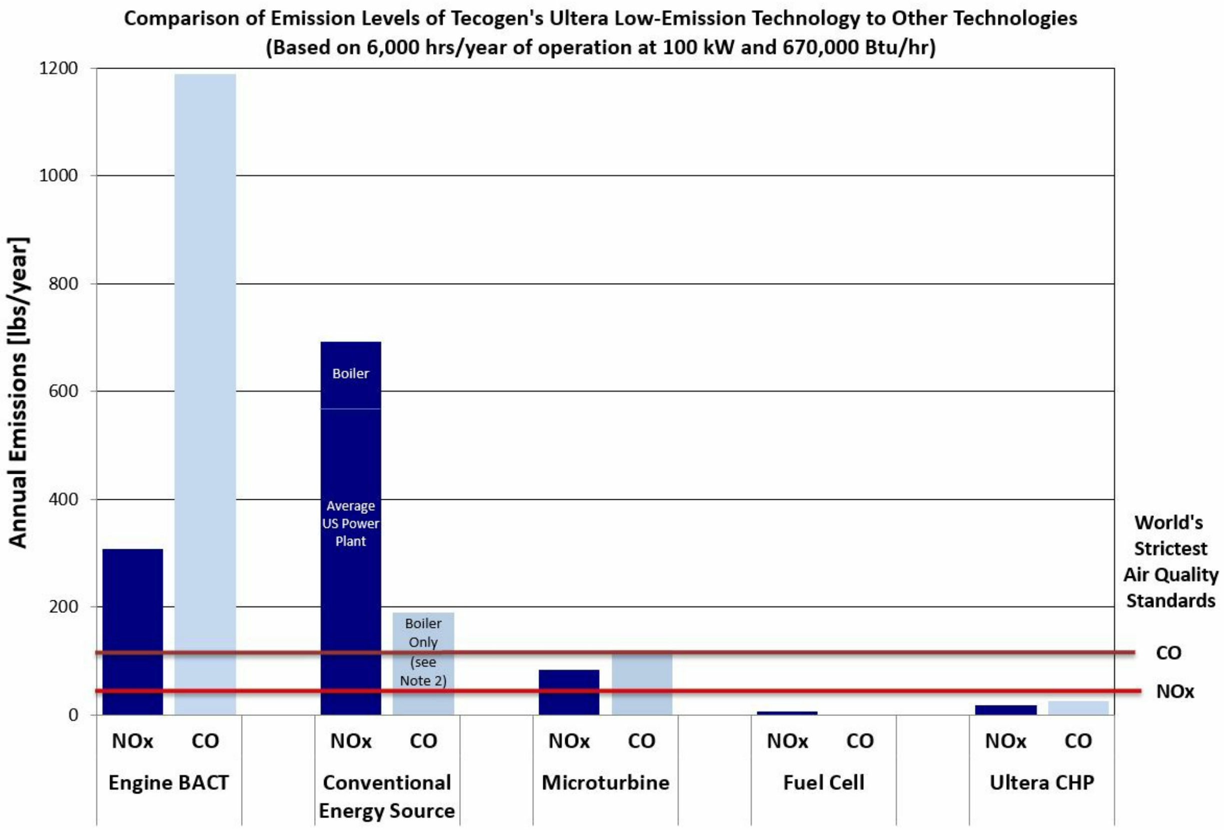
Following on the success of the water-sourced model, in early 2015 a 'split system' Ilios model was introduced. The new split system offers increased flexibility because its air-source evaporator package can be installed remotely. The engine driven heat pump, which is contained in a small acoustic enclosure, can be located with a building's mechanical space while the quiet air-source evaporator package can be installed on a roof, or in any outdoor space. The outdoor evaporator component is connected to the indoor heat pump via refrigerant lines, therefore eliminating all freeze protection issues in colder climates. All of the water being heated remains inside the conditioned space, eliminating the need for a costly isolation heat exchanger and additional pumps, which simplifies installation and increases efficiency by being able to operate at a lower delivery temperature.

The heat pump water heater serves as a boiler, producing hot water for drinking and washing, for space heating, swimming pools, or other building loads. Energy cost savings to the customer depend on the climate. Heat pumps in general, whether gas or electric, perform best in moderate weather conditions although the performance of the Ilios water-source heat pump is not impacted by weather or climate conditions. In a typical building, the Ilios heat pump would be added on to an existing heating or water heating system, and would operate as many hours as possible. The conventional boiler would be left in place, but would serve mainly as a backup when the heat pump's engine is down for maintenance or when the heat pump cannot meet the building's peak heating load. In areas where low electric rates make CHP less economical, the Ilios heat pump could be a financially attractive alternative because its economics depend only on natural gas rates. In some areas with high electric rates, the Ilios option could have advantages over CHP; for example where it is hard to connect to the utility grid or where the building's need for electricity is too low for CHP to be economically sound.

Ultera Low-Emissions Technology

All of our CHP products are available with the patented Ultera low-emissions technology as an equipment option. This breakthrough technology was developed in 2009 and 2010 as part of a research effort partially funded by the California Energy Commission and Southern California Gas Company. The objective was to bring our natural-gas engines into compliance with California's stringent air quality standards.

The chart below shows that, as of December 31, 2016, our Ultera CHP and fuel cell technologies are the only technologies that we know of which comply with California's air quality standards for CO and NOx, represented in the chart by the colored horizontal lines, shown as the world's strictest air quality standards on the lower right of the chart.



(5) (2) (4) (4) (3) (1)

(1) California has the strictest air quality standards for engines in the world
(2) Conventional Energy Source is U.S. powerplant and gas boiler. Average U.S. powerplant NOx emission rate of 0.9461 lb/MWh from (USEPA eGrid 2012), CO data not available. Gas boiler efficiency of 78% (www.eia.gov) with emissions of 20 ppm NOx @ 3% O_2 (California Regulation SCAQMD Rule 1146.2 and <50 ppmv CO @ 3% O_2 (California Regulation SCAQMD BACT).
(3) Tecogen emissions based upon actual third party source test data.
(4) Microturbine and Fuel Cell emissions from EPA CHP Partnership - Catalog of CHP Technologies- March 2015.
(5) Stationary Engine BACT as defined by SCAQMD.

Through development of a two stage catalyst emission treatment system, the Company was able to meet or exceed the strict air quality regulations with a solution that is cost-effective, robust, and reliable. Inclusion of the patent-protected Ultera low-emissions technology as an option keeps our CHP systems compliant with air quality regulations. The first commercial CHP units equipped with Ultera low-emissions technology shipped to a California utility in 2011. We conducted three validation programs for this technology:

1. Third-party laboratory verification. The AVL California Technology Center, a long-standing research and technology partner with the international automotive industry, confirmed our results in their state-of-the-art dynamometer test cell, which was outfitted with sophisticated emissions measurement equipment.
2. Verifying longevity and reliability in the field. By equipping one of our 75 kW units, already operating at a customer location in Southern California with the Ultera low-emissions technology and a device to continuously monitor emissions we verified longevity and reliability. The Ultera low-emissions system operated successfully for more than 25,000 hours, approximately 3.5 years, and consistently complied with California's stringent emission standards over the entire field testing period.
3. Additional independent tests. During the field test, two companies licensed in California to test emissions each verified our results at different times. The results from one of these tests, obtained in August 2011, enabled us to qualify for New Jersey's fast-track permitting. Virtually every state nationwide requires some kind of permit related to local air quality, but New Jersey allows an exemption for systems such as ours that demonstrate superior emissions performance. This certification was granted in November 2011, and since then we have sold Ultera low-emissions systems to customers in this territory.

In 2012, a 75 kW CHP unit equipped with the Ultera system became our first unit to obtain a conditional air permit (i.e., pending a third party source test to verify compliance) in Southern California since the strict regulations went into effect in 2009. A state-certified source test, administered in January 2013, verified that our emissions levels were well below the new permitting requirements, and the final permit version was approved in August 2013.

Standby Generators

After successfully developing the Ultera technology for our own equipment, the Tecogen research & development team began exploring other possible emissions control applications in an effort to expand the market for the ultra-clean emissions system. Retrofit kits were developed in 2014 for other stationary engines and in 2015 the Ultera Retrofit Kit was applied successfully to natural gas stand-by generators from other manufacturers, including Generac and Caterpillar.

Historically, standby generators have not been subjected to the strict air quality emissions standards of traditional power generation. However, generators which run for more than 200 hours per year or run for non-emergency purposes (other than routine scheduled maintenance) in some territories are subject to compliance with the same stringent regulations applied to a typical electric utility. As demand response programs become more economically attractive and air quality regulations continue to become more stringent, there could be strong demand for retrofitting of standby generators with our Ultera emissions control technology, thus providing a cost-effective solution to keeping the installed base of standby generators operational and in compliance.

Biogas

The Ultera emissions control technology developed by our engineering team applies specifically to rich-burn, spark-ignited, internal combustion engines. While it was originally intended for natural gas powered engines, there is reason to believe the technology may be adapted for other fuel types as long as the engine meets the rich-burn criteria.

In 2015 the Ultera system was applied to a biogas powered engine operating at the Eastern Municipal Water District's (EMWD) Moreno Valley Region Water Reclamation Facility in Perris, California. The demonstration project was a result of an ongoing collaboration between Tecogen, the EMWD and various other partners. This project successfully applied an Ultera retrofit kit to a 50 liter Caterpillar engine fueled by biogas extracted from an anaerobic digester.

Biogas is a significant byproduct of wastewater treatment plants. Considered to be a renewable source of fuel, it is becoming an increasingly important resource for power generation. According to the American Biogas Council, nationwide there are over 1,100 engines fueled by wastewater-derived biogas, over 600 fueled by landfill-generated biogas, and over 100 running on biogas from agricultural waste. This represents a significant potential market for Ultera retrofit kit application as these biogas engines become subject to the same air quality standards as traditional power generation sources.

Gasoline Vehicles

In October 2015, following revelations of wide-scale problems with vehicle emissions compliance and testing, Tecogen formed an Emissions Advisory Committee to examine the potential application of Ultera to the automotive gasoline market. According to the U.S. EPA, 50 percent of nitrogen oxides (NOx) and 60 percent of all carbon monoxide (CO) emissions in the United States comes from vehicle exhaust. These are precisely the two pollutants Tecogen's Ultera emission control system is designed to target. After a thorough investigative process on the part of the Emissions Advisory Committee and various industry expert consultants, the group recommended Tecogen pursue a funded initiative to develop the technology for gasoline vehicles.

In December 2015, the Company and a group of strategic investors formed a joint venture company Ultra Emissions to advance Tecogen's near-zero emissions technology for adaptation to transportation applications powered by spark-ignited rich-burn engines in the automobile and truck categories. Tecogen has granted Ultra Emissions an exclusive license for the development of its patented, emissions-related, intellectual property for the vehicle market.

Initially Ultra Emissions' focus was on preliminary research, testing, and verification that the Ultera technology can in fact be applied to gasoline engines while maintaining similar near-zero emission results as have been demonstrated in other use cases. Having completed multiple phases of testing at AVL's California Technology Center, the Ultra Emissions team has verified the Ultera technology for gasoline automotive use and is moving forward with their development work.

If successfully developed, the market for automotive emissions control could be a source of future growth for the Company; although that potential could take several years to be realized and there is no guarantee we will be successful.

Propane Fork Trucks

In October 2016, the Company was awarded a Propane Education & Research Council (PERC) research grant funding for the Company's proposal to develop the Ultera ultra-clean emissions control technology for the propane powered fork truck market.

Electric fork trucks have been making significant in-roads in the fork truck industry, in part, because of their green image and indoor air quality benefit. The primary benefit of the Ultera-equipped ultra-clean propane fork truck will be fuel cell like emissions and a propane-green brand that offers a robust indoor air quality advantage without compromising vehicle performance. The project will assess the adaption of Tecogen's near-zero emissions technology for the fork truck category and demonstrate the technical performance on popular propane fork truck models. Select industry-leading fork truck manufacturers are also participating in the research initiative.

Management believes that approximately 70,000 propane powered fork trucks are sold annually in the United States. Successful completion of this project could open a new emissions control market to Tecogen.

Other Ultera Applications

According to a 2013 Massachusetts Institute of Technology study, the U.S. experiences 200,000 early deaths each year due to emissions from heavy industry, transportation, and commercial and residential heating. As climate change and air quality continue to develop as areas of focus by government regulators, emissions restrictions are expected to become increasingly stringent around the world. These tightening regulations could open up new markets and applications for the Ultera near-zero emissions control technology. Some of these opportunities may include:

- Commercial and industrial natural gas fueled engines from other manufacturers
- Natural gas and biogas powered vehicle fleets - such as municipal bus fleets

TTcogen LLC

In May 2016, the Company and Tedom entered into a joint venture, of which a 50% interest is held by each of the Company and Tedom. As part of the joint venture, the parties agreed to create a Delaware limited liability company, TTcogen LLC, to carry out the business of the venture. Tedom granted TTcogen the sole and exclusive right to market, sell, offer for sale, and distribute certain products as agreed to by the parties throughout the United States. The product offerings of the joint venture expand the current Tecogen product offerings from small-scale MicroCHP of 35 kW up to large 4,000 kW (4 MW) custom plants. Tecogen agreed to refer all appropriate sale leads to TTcogen regarding the products agreed to by the parties and Tecogen shall have the first right to install, repair and maintain the products sold by TTcogen.

Product Service

We provide long-term maintenance contracts, parts sales, and turnkey installation through a network of nine well-established field service centers in California, the Midwest, and the Northeast. These centers are staffed by full-time Tecogen technicians, working from local leased facilities. The facilities provide offices and warehouse space for inventory. We encourage our customers to provide internet or phone connections to our units so that we may maintain remote communications with the installed equipment. For connected installations, the machines are contacted daily, download their status, and provide regular operational reports (daily, monthly, and quarterly) to our service managers. This communication link is used to support the diagnosis effort of our service staff and to send messages to preprogrammed phones if a unit has experienced an unscheduled shutdown. In many cases, communications received by service technicians from connected devices allow for proactive maintenance; minimizing equipment downtime and improving operating efficiency for the customer.

The work of our service managers, supervisors, and technicians focuses on our products. Because we manufacture our own equipment, our service technicians bring hands-on experience and competence to their jobs. They are trained at our corporate headquarters and primary manufacturing facility in Waltham, Massachusetts.

Most of our service revenue is in the form of annual service contracts, which are typically of an all-inclusive “bumper-to-bumper” type, with billing amounts proportional to the equipment's achieved operating hours for the period. Customers are thus invoiced in level, predictable amounts without unforeseen add-ons for such items as unscheduled repairs or engine replacements. We strive to maintain these contracts for many years, assuring the integrity and performance of our equipment is maintained.

Our products have a long history of reliable operation. Since 1995, we have had a remote monitoring system in place that connects to hundreds of units daily and reports their “availability,” which is the amount of time a unit is running or is ready to run in hours. More than 80% of them operate above 90% availability, with the average being 93.8%. Our factory service agreements have directly impacted these positive results and represent an important, long-term, annuity-like stream of revenue for the Company.

In early 2016, we announced the selection of General Electric Company’s (NYSE: GE) Equipment Insight solution for new equipment sold beginning in 2016 and for select upgrades to the existing installed equipment fleet. With GE’s technology, Tecogen is able to collect, analyze, and manage valuable asset data continuously and in real-time, providing the service team with improved insight into the functionality of our installed CHP fleet. GE Equipment Insight allows Tecogen to provide a more seamless and proactive maintenance approach while also ensuring peak performance of installed equipment and improving the equipment payback period for our customers. This industrial internet solution enables the service department to perform remote monitoring and diagnostics and to view system results in real time via a computer, smart phone or tablet. The solution enables users to better utilize monitoring data, ensuring customers are capturing maximum possible savings and efficiencies from their installation. Through constant monitoring and analysis of equipment data, Tecogen expects to enhance the performance of installed equipment by ensuring machinery consistently operates at peak performance and is available to deliver maximum potential value for customers.

Contributions to Revenue

The following table summarizes net revenue by product line and services for the years ended December 31, 2016 and 2015:

	2016	2015
Products:		
Cogeneration	$ 7,794,575	$ 7,882,838
Chiller & Heat Pump	2,927,710	2,172,399
Total product revenue	10,722,285	10,055,237
Service & Parts	8,541,047	7,832,181
Installation Services	5,227,054	3,555,239
Total service revenue	13,768,101	11,387,420
Total revenue	$ 24,490,386	$ 21,442,657

All of the Company’s long lived assets reside in the United States. Currently, some revenue is generated outside the United States, including from sales in the United Kingdom, Mexico, Ireland, and others.

Sales & Distribution

Our products are sold directly to end-users by our sales team and by established sales agents and representatives. Various agreements are in place with distributors and outside sales representatives, who are compensated by commissions for certain territories and product lines. Sales through our in-house team or sales that are not covered by a representative’s territory carry no or nominal commissions. For the fiscal years ended 2016 and 2015, no distribution partner or customer relationship accounted for more than 10% of total combined company revenue.

Our product sales cycle exhibits typical seasonality for the HVAC industry with sales of chillers generally stronger in the warmer months while heat pump sales are stronger in the cooler months.

Total product and installation backlog as of December 31, 2016 was $11.1 million compared to year end 2015 backlog of $11.6 million. Please see "Management's Discussion and Analysis of Financial Condition and Results of Operations" and related Risk Factors below for additional information about the Company's backlog.

Markets and Customers

Worldwide, stationary power generation applications vary from huge central stationary generating facilities (traditional electric utility providers) to back-up generators as small as 2 kW. Historically, power generation in most developed countries such as the United States has been part of a regulated central utility system utilizing high-temperature steam turbines powered by fossil-fuels. This turbine technology, though steadily refined over the years, reached a maximum efficiency (where efficiency means electrical energy output per unit of fuel energy input) of approximately 40%.

A number of developments related primarily to the deregulation of the utility industry as well as significant technological advances have now broadened the range of power supply choices available to all types of customers. CHP, which harnesses waste energy from power generation processes and puts it to work for other uses on-site, can boost the energy conversion efficiency to nearly 90%, a better than two-fold improvement over the average efficiency of a fossil fuel plant. This distributed generation, or power generated on-site at the point of consumption rather than power generated centrally, eliminates the cost, complexity, and inefficiency associated with electric transmission and distribution. The implications of the CHP distributed generation approach are significant. If CHP were applied on a large scale, global fuel usage might be dramatically curtailed and the utility grid made far more resilient.

Our CHP products address the inherent efficiency limitation of central power plants by siting generation close to the loads being served. This allows customers with energy-intensive buildings or processes to reduce energy costs and operate with a lower carbon footprint. Furthermore, with technology we have introduced, like the Ultera low-emissions technology, our products can now contribute to better air quality at the local level while complying with the strictest air quality regulations in the United States.

Cogeneration and chiller products can often reduce the customer's operating costs (for the portion of the facility loads to which they are applied) by approximately 30% to 60% based on Company estimates, which provides an excellent rate of return on the equipment's capital cost in many areas of the country with high electricity rates. Our chillers are especially suited to regions where utilities impose extra charges during times of peak usage, commonly called “demand” charges. In these cases, the gas-fueled chiller reduces the use of electricity during the summer, the most costly time of year.

On-site CHP not only eliminates the loss of electric power during transmission, but also offsets the capital expense of upgrading or expanding the utility infrastructure. The national electric grids of many developed countries are already challenged to keep up with existing power demand. In addition, the transmission and distribution network is operating at capacity in a majority of urban areas. Decentralizing power generation by installing equipment at customer sites not only relieves the capacity burden on existing power plants, but also lessons the burden on transmission and distribution lines. This ultimately improves the grid's reliability and reduces the need for costly upgrades.

Increasingly favorable economic conditions could improve our business prospects domestically and abroad. Specifically, we believe that natural gas prices might increase from their current depressed values, but only modestly, while electric rates would continue to rise over the long-term as utilities pay for grid expansion, better emission controls, efficiency improvements, and the integration of renewable power sources.

The largest numbers of potential new customers in the U.S. require less than 1 MW of electric power and less than 1,200 tons of cooling capacity. We are targeting customers in states with high electricity rates in the commercial sector, such as California, Connecticut, Massachusetts, New Hampshire, New Jersey, and New York. These regions also have high peak demand rates, which favor utilization of our modular units in groups so as to assure redundancy and peak demand savings. Some of these regions also have generous rebates that improve the economic viability of our systems.

We aggressively market to both potential domestic and international customers where utility pricing aligns with our advantages. These areas include regions that have strict emissions regulations, such as California, or those that reward CHP systems that are especially non-polluting, such as New Jersey. There are currently 23 states that recognize CHP as part of their Renewable Portfolio Standards or Energy Efficiency Resource Standards and several of them, including New York, California, Massachusetts, New Jersey, and North Carolina, have initiated specific incentive programs for CHP.

The traditional markets for CHP systems are buildings with long hours of operation and with corresponding demand for electricity and heat. Traditional customers for our cogeneration systems include hospitals and nursing homes, colleges and universities, health clubs and spas, hotels and motels, office and retail buildings, food and beverage processors, multi-unit residential buildings, laundries, ice rinks, swimming pools, factories, municipal buildings, and military installations.

Traditional customers for our chillers and heat pumps overlap with those for our cogeneration systems. Engine-driven chillers are often used as replacements for aging electric chillers because they both occupy similar amounts of floor space and require similar maintenance schedules.

Competition

Although we believe Tecogen offers customers a suite of premier best-in-class clean energy and thermal solutions, the market for our products is highly competitive. Our cogeneration products compete with the utility grid, existing technologies such as other reciprocating engine and microturbine CHP systems, and other emerging distributed generation technologies including solar power, wind-powered systems, and fuel cells. We believe that Capstone Turbine Corporation is the only microturbine manufacturer with a commercial presence in CHP.

Although solar and wind powered systems produce no emissions, the main drawbacks to these renewable powered systems are their dependence on weather conditions, their reliance on backup utility grid-provided power, and high capital costs that can often make these systems uneconomical without government subsidies. Similarly, while the market for fuel cells is still developing, a number of companies are focused on markets similar to ours. Fuel cells, like solar and wind powered systems, have received higher levels of incentives for the same type of applications as CHP systems in many territories. Management believes that, absent these higher government incentives, our CHP solutions provide a better value and more robust solution to end users in most applications.

Additionally, our patents relating to the Ultera ultra-low emissions technology give Tecogen products a strong competitive advantage in markets where severe emissions limits are imposed or where very clean power is favored, such as New Jersey, California, and Massachusetts.

Our products fall into the broad market category of distributed generation systems that produce electric power on-site to mitigate the drawbacks of traditional central power and the low efficiency of conventional heating processes.

Overall, we compete with end users' other options for electrical power, heating and cooling on the basis of our clean technology's ability to:

- Provide power when a utility grid is not available or goes out of service;
- Reduce the customer's total cost of purchasing electricity and other fuel;
- Reduce emissions of criteria pollutants (NOx and CO) to near-zero levels and cut the emission of greenhouse gas such as carbon dioxide;
- Provide reliable on-site power generation, heating and cooling services; and
- Control maintenance costs and ensure optimal peak equipment performance.

InVerde CHP

We believe that no other company has developed a product that competes with our inverter-based InVerde, which offers UL-certified grid connection, black-start capability, and patented variable-speed operation. An inverter-based product with at least some of these features has been introduced by others, but we believe that they face serious challenges in duplicating all the unique features of the InVerde. Product development time and costs could be significant, and we expect that our patents and license for Microgrid software will keep others from offering certain important functions.

Similarly, in the growing Microgrid segment, neither fuel cells nor microturbines can respond to changing energy loads when the system is disconnected from the utility grid. Engines such as those used in Tecogen's equipment inherently have a fast dynamic response to step load changes, which is why they are the primary choice for emergency generators. Fuel cells and microturbines would require an additional energy storage device to be utilized in off-grid operation, giving our engine-driven solutions an advantage for Microgrid and resiliency applications.

TECOCHILL Chillers

The Company's TECOCHILL line of chiller is the only gas-engine-driven chiller available on the market. Natural gas can also fuel absorption chillers, which use fluids to transfer heat without an engine drive. However, engine chillers continue to have an efficiency advantage over absorption machines, TECOCHILL products reach efficiencies well above levels achieved by similarly sized absorption systems. Today's low natural gas prices in the United States improve the economics of gas-fueled chillers while their minimal electric demand on back up power systems make them ideal for facilities requiring critical precision climate control.

Ilios Heat Pump

There are a few companies manufacturing gas-engine heat pumps, including Yanmar and Tedom. The Ilios water heater and other heat pump products compete in both the high-efficiency water heating market and the CHP market.

Research & Development

Tecogen has a long, rich, research and development tradition and sustained programs have allowed us to cultivate deep engineering expertise. We have strong core technical knowledge that is critical to product support and continuous product improvement efforts. Our TecoDrive engine, permanent magnet generator, cogeneration and chiller products, InVerde, Ilios heat pumps, and most recently the Ultera emissions control system were all created and optimized in-house with both public and private funding support.

We continue to seek to forge alliances with utilities, government agencies, universities, research facilities, and manufacturers. The Company has already succeeded in developing new technologies and products in collaboration with several entities, including:

- Sacramento Municipal Utility District has provided test sites for the Company since 2010.
- Southern California Gas Company and San Diego Gas & Electric Company, each a Sempra Energy subsidiary have granted us research and development contracts since 2004.
- Department of Energy's Lawrence Berkeley National Laboratory, research and development contracts executed since 2005, including ongoing Microgrid development work related to the InVerde.
- Eastern Municipal Water District has co-sponsored demonstration projects to retrofit both a natural-gas powered municipal water pump engine, and a biofuel powered pumping station engine with the Ultera low emissions technology since 2012.
- Consortium for Electric Reliability Technology Solutions executed research and development contracts, and provided a test site to the Company since 2005.
- California Energy Commission executed research and development contracts from 2004 until March 2013.
- The AVL California Technology Center has performed a support role in research and development contracts as well as internal research and development on our emission control system from August 2009 to November 2011. Currently, this testing center's work on emissions from gasoline vehicles which began in January of 2016 continues for the Ultra Emissions joint venture.
- Propane Education & Research Council (PERC) executed research and development contracts for work related to developing Ultera for the propane powered fork truck market.

Our efforts to forge partnerships continue to focus on utilities, particularly to promote the InVerde, our most utility-friendly product. The nature of these alliances varies by utility, but could include simplified interconnection, joint marketing, ownership options, peak demand mitigation agreements, and customer services. We have commissioned a Microgrid with the Sacramento Municipal Utility District at its headquarters in Sacramento, California, where the central plant incorporated three InVerde systems equipped with our Ultera low-emissions technology. Some expenses for this project were reimbursed to the utility through a grant from the California Energy Commission.

Certain components of our InVerde product were developed through a grant from the California Energy Commission. This grant includes a requirement that we pay royalties on all sales of all products related to the grant. As of December 31, 2016, such royalties accrued in accordance with this grant agreement were less than $6,000 on an annual basis.

We also continue to leverage our resources with government and industry funding, which has yielded a number of successful developments, including the Ultera low-emissions technology, sponsored by the California Energy Commission and Southern California Gas Company. Pursuant to the terms of the grants from the California Energy Commission, the California Energy Commission has a royalty-free, perpetual, non-exclusive license to these technologies, for government purposes.

For the years ended December 31, 2016 and 2015, we spent approximately $667,064 and $591,585, respectively, in research and development activities.

Intellectual Property

Patents

We currently hold six United States patents for our technologies:

- 9,470,126: "Assembly and method for reducing ammonia in exhaust of internal combustion engines." This patent, granted in October 2016, is related to the *Ultera* emission control system applicable to all of our products.
- 9,121,326: "Assembly and method for reducing nitrogen oxides, carbon monoxide and hydrocarbons in exhausts of internal combustion engines." This patent, granted in September 2015, is related to the *Ultera* emission control system applicable to all of our products.
- 8,829,698: "Power generation systems." This patent, granted in September 2014, is for a power generation system that includes an internal combustion engine configured to provide rotational mechanical energy.
- 8,578,704: "Assembly and method for reducing nitrogen oxides, carbon monoxide, and hydrocarbons in exhausts of internal combustion engines." This patent, granted in November 2013, is for the *Ultera* emission system applicable to all our products.

- 7,239,034: “Engine driven power inverter system with cogeneration.” This patent, granted in July 2007, pertains to the utilization of an engine-driven CHP module combined with an inverter and applies to our *InVerde* product specifically.
- 7,243,017: “Method for controlling internal combustion engine emissions.” This patent, granted in July 2007, applies to the specific algorithms used in our engine controller for metering the fuel usage to obtain the correct combustion mixture and is technology used by most of our engines.

We have filed for several additional patents - most notable among them:

- "Systems and methods for reducing emissions in exhaust of vehicles and producing electricity." This patent, filed in November 2015 and published in March 2016, is related to the development of the *Ultera* emission control system for vehicle applications.
- “Poison-Resistant Catalyst and Systems Containing Same.” This application, filed in March 2016, relates to treatment of exhaust generated by internal combustion engines, combustion turbines, and boilers and more particularly to systems and method for treating exhausts containing one or more poisons, such as sulfur.
- “Internal Combustion Engine Controller.” This application, filed in October 2015, relates to controllers and control circuits for controlling an internal combustion engine, including a gas fired internal combustion prime mover used for driving a generator for generating electrical power.
- “Emissions Control Systems and Methods for Vehicles.” This application, filed in April 2016 relates to emissions control systems for vehicles.

In addition, the Company licensed specific rights to Microgrid algorithms developed by University of Wisconsin researchers for which we pay royalties to the assignee, The Wisconsin Alumni Research Foundation (WARF). The specific patent named in our agreement is “Control of small distributed energy resources” (7,116,010), granted in 2006. Our exclusive rights are valid for engine-driven systems utilizing natural gas or diesel fuel in the application of power generation where the per-unit output is less than 500 kW.

The software allows our products to be integrated as a Microgrid, where multiple InVerde units can be seamlessly isolated from the main utility grid in the event of an outage and re-connected to it afterward. The licensed software allows us to implement such a Microgrid with minimal control devices and associated complexity and cost. Tecogen pays WARF a royalty for each cogeneration module sold using the licensed technology. Such royalty payments have been in the range of $5,000 to $20,000 on an annual basis through the year ended December 31, 2016. In addition, WARF reserved the right to grant non-profit research institutions and governmental agencies non-exclusive licenses to practice and use, for non-commercial research purposes technology developed by Tecogen that is based on the licensed software.

We consider our patents and licensed intellectual property to be important in the operation of our business. The expiration, termination, or invalidity of one or more of these patents may have a material adverse effect on our business. Our earliest patent, licensed from WARF, was issued in 2006 and expires in 2022. Most of our current patents expire between 2022 and 2027.

We believe that one other company has developed a product that competes with our inverter-based InVerde. We anticipate that an inverter-based product with at least some of these features will be introduced by others, but we believe that competitors will face serious challenges in duplicating the InVerde. Product development time and costs would likely be significant, and we expect that our patent for the inverter-based CHP system (7,239,034) would offer significant protection, especially in key features. Likewise, we consider the Microgrid license with WARF to be a key feature of our InVerde product, and one that would be difficult to duplicate outside the patent.

In 2013, we purchased rights to designs and technologies including patents granted or pending for our permanent magnet generators. A key component of our InVerde module uses this acquired technology.

The recent issuance by the U.S. PTO of the patent for the Ultera low-emissions technology keeps that technology exclusive to us. It applies to all of our gas engine-driven products and may have licensing applications to other rich-burn spark-ignited internal combustion engines. We have also filed for or been granted patents for this technology in Europe, Australia, Brazil, Canada, China, Costa Rica, Dominican Republic, India, Japan, Mexico, New Zealand, Republic of Korea, Singapore, and South Africa. There is no assurance, however, that the Ultera low-emissions patent applications will be approved in any other country.

Copyrights

Our control software is protected by copyright laws or on an exclusive license agreement.

Trademarks

The Company has registered the brand names of our equipment and logos used on our equipment. These registered trademarks include Tecogen, Tecochill, Ultera, InVerde, Ilios, and the associated logos. We will continue to trademark our product names and symbols.

We rely on treatment of our technology as trade secrets through confidentiality agreements, which our employees and vendors are required to sign. Also, we rely on non-disclosure agreements with others that have or may have access to confidential information to protect our trade secrets and proprietary knowledge.

Sourcing & Manufacturing

We are focused on continuously strengthening our manufacturing processes and increasing operational efficiencies within the Company. Many of the components used in the manufacture of our highly-efficient clean energy equipment are readily fabricated from commonly available raw materials or are standardly available parts sourced from multiple suppliers. We believe that in most cases, adequate supply exists to meet our near to medium term manufacturing needs. Tecogen has an on-going focus on developing and implementing new systems to simplify our manufacturing processes, product sourcing methods, and our supply chain.

The Company has a combined total of approximately 26,000 square foot manufacturing and warehouse footprint running on a single 5-day per week shift at the Waltham, Massachusetts facility. We believe we have sufficient spare capacity to meet near to medium term demand without accruing additional fixed cost.

Government & Regulation

Several kinds of federal, state and local government regulations affect our current and future business, including but not exclusive to:

- Product safety certifications and interconnection requirements;
- Air pollution regulations, which govern the emissions allowed in engine exhaust;
- State and federal incentives for CHP technology;
- Various local building and permitting codes and third party certifications; and
- Electric utility pricing and related regulations.

Our markets can be positively or negatively impacted by the effects of governmental and regulatory matters. We are impacted not only by energy policy, laws, regulations and incentives of governments in the markets in which we sell, but also by rules, regulations and costs imposed by utilities. Utility companies or governmental entities may place barriers on the installation or interconnection of our product with the electric grid. Further, utility companies may charge additional fees to customers who install on-site power generation; thereby reducing the electricity they take from the utility, or for having the capacity to use power from the grid for back-up or standby purposes. These types of restrictions, fees or charges could hamper the ability to install or effectively use our product, or increase the cost to our potential customers for using our systems. This could make our systems less desirable, adversely impacting our revenue and profitability. In addition, utility rate reductions can make our products less competitive, causing a material adverse effect on our operations. These costs, incentives and rules are not always the same as those faced by technologies with which we compete.

Similarly, rules, regulations, laws and incentives could also provide an advantage to our distributed generation solutions as compared with competing technologies if we are able to achieve required compliance in a lower cost, more efficient manner. Additionally, reduced emissions and higher fuel efficiency could help our customers combat the effects of global warming. Accordingly, we may benefit from increased government regulations that impose tighter emission and fuel efficiency standards. We encourage investors and potential investors to carefully consider associated Risk Factors detailed below which highlight various aspects of the regulatory environment and other related risks.

Employees

As of December 31, 2016, we employed 83 full-time employees and 3 part-time employees, including 7 sales and marketing personnel and 35 service personnel. We believe that our relationship with our employees is satisfactory. Six of our New Jersey service employees are represented by a collective bargaining agreement which was executed on December 30, 2016 with an effective date of January 1, 2017.

Item 1A. Risk Factors

Our business, operations and the Company face many risks. The risks described below may not be the only risks we face. Additional risks that we do not yet know of, or that we currently think are immaterial, may also impair our business operations or financial results. If any of the events or circumstances described in the following risks occur, our business, financial condition or results of operations could suffer and the trading price of our common stock could decline. Investors and prospective investors should consider the following risks and the information contained under the heading "Cautionary Note Concerning Forward-Looking Statements" before deciding whether to invest in our securities.

Risks Relating to Our Business

We may be unable to fund our future operating requirements, which could force us to curtail our operations.

If the cash generated by operations is insufficient to fund our future operating requirements, we would need to raise additional funds through further public or private equity or debt financings depending upon prevailing market conditions. These financings may not be available to us, or if available, may be on terms that are not favorable to us and could result in significant dilution to our stockholders and reduction in the trading price of our stock. The state of worldwide capital markets could also impede our ability to raise additional capital on favorable terms or at all. If adequate capital were not available to us, we likely would be required to significantly curtail our operations or possibly even cease our operations.

If we experience a period of significant growth or expansion, it could place a substantial strain on our resources.

If our cogeneration and chiller products penetrate the market rapidly, we would be required to deliver even larger volumes of technically complex products or components to our customers on a timely basis and at a reasonable cost to us. We have never ramped up our manufacturing capabilities to meet significant large-scale production requirements. If we were to commit to deliver large volumes of products, we may not be able to satisfy these commitments on a timely and cost-effective basis.

Our operating history is characterized by net losses.

For each of our last five fiscal years and prior thereto, we have incurred annual operating losses. We do not expect this trend to continue. We believe we have adequate cash resources to reach the point of full year profitability. Even if we do achieve this annual profitability, we may be unable to increase our sales and sustain or increase our profitability in the future.

We are dependent on a limited number of third-party suppliers for the supply of key components for our products.

We use third-party suppliers for components in all of our products. Our engine supplier, generator supplier for cogeneration products (other than the InVerde), and the compressor and vessel sets in our chillers, are all purchased from large multinational equipment manufacturers. The loss of one or more of our suppliers could materially, and adversely affect our business if we are unable to replace them. While alternate suppliers for the manufacture of our engine, generator and compressor have been identified, should the need arise, there can be no assurance that alternate suppliers will be available and able to manufacture our engine, generator or compressor on acceptable terms.

From time to time, shipments can be delayed because of industry-wide or other shortages of necessary materials and components from third-party suppliers, as well as shipping delays at points of importation. A supplier's failure to supply components in a timely manner, or to supply components that meet our quality, quantity, or cost requirements, or our inability to obtain substitute sources of these components on a timely basis or on terms acceptable to us, could impair our ability to deliver our products in accordance with contractual obligations.

The amount of Tecogen's backlog is subject to fluctuation due to its customers' experiencing unexpected delays in financing, permitting or modifications in specifications of the equipment.

Tecogen's total product and installation backlog as of December 31, 2016 was $11.1 million compared to $11.6 million as of December 31, 2015. Although Tecogen expects its customers to issue definitive purchase orders with respect to such backlog, there can be no assurance that such amounts will not be subject to modification in the event customers experience unexpected delays in obtaining permits, interconnection agreements or financing. Any of such events may result in customers modifying the equipment or the terms or timing of the expected installation, which may result in changes to the amount of backlog attributed to those projects.

We expect significant competition for our products and services.

Many of our competitors and potential competitors are well established and have substantially greater financial, research and development, technical, manufacturing and marketing resources than we do. If these larger competitors decide to focus on the development of distributed power or cogeneration, they have the manufacturing, marketing and sales capabilities to complete research, development and commercialization of these products more quickly and effectively than we can. There can also be no assurance that current and future competitors will not develop new or enhanced technologies or more cost-effective systems, and therefore, there can be no assurance that we will be successful in this competitive environment.

If we are unable to maintain our technological expertise in design and manufacturing processes, we will not be able to successfully compete.

We believe that our future success will depend upon our ability to continue to develop and provide innovative products and product enhancements that meet the increasingly sophisticated needs of our customers.

However, this requires that we successfully anticipate and respond to technological changes in design and manufacturing processes in a cost-effective and timely manner. The development of new, technologically advanced products and enhancements is a complex and uncertain process requiring high levels of innovation, as well as the accurate anticipation of technological and market trends. There can be no assurance that we will successfully identify new product opportunities, develop and bring new or enhanced products to market in a timely manner, successfully lower costs, and achieve market acceptance of our products, or that products and technologies developed by others will not render our products or technologies obsolete or noncompetitive.

The introduction of products embodying new technologies, and the shifting of customer demands or changing industry standards, could render our existing products obsolete and unmarketable. We may experience delays in releasing new products and product enhancements in the future. Material delays in introducing new products or product enhancements may cause customers to forego purchases of our products and purchase those of our competitors.

Our intellectual property may not be adequately protected.

We seek to protect our intellectual property rights through patents, trademarks, copyrights, trade secret laws, confidentiality agreements, and licensing arrangements, but we cannot ensure that we will be able to adequately protect our technology from misappropriation or infringement. We cannot ensure that our existing intellectual property rights will not be invalidated, circumvented, challenged, or rendered unenforceable.

Our competitors may successfully challenge the validity of our patents, design non-infringing products, or deliberately infringe our patents. There can be no assurance that other companies are not investigating or developing other similar technologies. In addition, our intellectual property rights may not provide a competitive advantage to us or ensure that our products and technology will be adequately covered by our patents and other intellectual property. Any of these factors or the expiration, termination, or invalidity of one or more of our patents may have a material adverse effect on our business.

Others may assert that our technology infringes their intellectual property rights.

We may be subject to infringement claims in the future. The defense of any claims of infringement made against us by third parties could involve significant legal costs and require our management to divert time from our business operations. If we are unsuccessful in defending any claims of infringement, we may be forced to obtain licenses or to pay additional royalties to continue to use our technology. We may not be able to obtain any necessary licenses on commercially reasonable terms or at all. If we fail to obtain necessary licenses or other rights, or if these licenses are costly, our operating results would suffer either from reductions in revenues through our inability to serve customers or from increases in costs to license third-party technologies.

Our success is dependent upon attracting and retaining highly qualified personnel and the loss of key personnel could significantly hurt our business.

To achieve success, we must attract and retain highly qualified technical, operational and executive employees. The loss of the services of key employees or an inability to attract, train and retain qualified and skilled employees, specifically engineering, operations, and business development personnel, could result in the loss of business or could otherwise negatively impact our ability to operate and grow our business successfully.

Our business is subject to product liability and warranty claims.

Our business exposes us to potential product liability claims, which are inherent in the manufacturing, marketing and sale of our products, and we may face substantial liability for damages resulting from the faulty design or manufacture of products or improper use of products by end users. We currently maintain a moderate level of product liability insurance, but there can be no assurance that this insurance will provide sufficient coverage in the event of a claim. Also, we cannot predict whether we will be able to maintain such coverage on acceptable terms, if at all, or that a product liability claim would not harm our business or financial condition. In addition, negative publicity in connection with the faulty design or manufacture of our products would adversely affect our ability to market and sell our products.

We sell our products with warranties. There can be no assurance that the provision in our financial statements for estimated product warranty expense will be sufficient. We cannot ensure that our efforts to reduce our risk through warranty disclaimers will effectively limit our liability. Any significant occurrence of warranty expense in excess of estimates could have a material adverse effect on our operating results, financial condition and cash flow. Further, we have at times undertaken programs to enhance the performance of units previously sold. These enhancements have at times been provided at no cost or below our cost. If we choose to offer such programs again in the future, such actions could result in significant costs.

Utilities or governmental entities could hinder our entry into and growth in the marketplace, and we may not be able to effectively sell our products.

Utilities or governmental entities on occasion have placed barriers to the installation of our products or their interconnection with the electric grid, and they may continue to do so. Utilities may charge additional fees to customers who install on-site CHP and rely on the grid for back-up power. These types of restrictions, fees, or charges could make it harder for customers to install our products or use them effectively, as well as increasing the cost to our potential customers. This could make our systems less desirable, thereby adversely affecting our revenue and other operating results.

We may not achieve production cost reductions necessary to competitively price our products, which would adversely affect our sales.

We believe that we will need to reduce the unit production cost of our products over time to maintain our ability to offer competitively priced products. Our ability to achieve cost reductions will depend on our ability to develop low-cost design enhancements, to obtain necessary tooling and favorable supplier contracts, and to increase sales volumes so we can achieve economies of scale. We cannot assure you that we will be able to achieve any such production cost reductions. Our failure to do so could have a material adverse effect on our business and results of operations.

Our products involve a lengthy sales cycle and we may not anticipate sales levels appropriately, which could impair our results of operations.

The sale of our products typically involves a significant commitment of capital by customers, with the attendant delays frequently associated with large capital expenditures. For these and other reasons, the sales cycle associated with our products is typically lengthy and subject to a number of significant risks over which we have little or no control. We expect to plan our production and inventory levels based on internal forecasts of customer demand, which is highly unpredictable and can fluctuate substantially. If sales in any period fall significantly below anticipated levels, our financial condition, results of operations and cash flow would suffer. If demand in any period increases well above anticipated levels, we may have difficulties in responding, incur greater costs to respond, or be unable to fulfill the demand in sufficient time to retain the order, which would negatively impact our operations. In addition, our operating expenses are based on anticipated sales levels, and a high percentage of our expenses are generally fixed in the short term. As a result of these factors, a small fluctuation in timing of sales can cause operating results to vary materially from period to period.

The economic viability of our projects depends on the price spread between fuel and electricity, and the variability of these prices creates a risk that our projects will not be economically viable and that potential customers will avoid such energy price risks.

The economic viability of our CHP products depends on the spread between natural gas fuel and electricity prices. Volatility in one component of the spread, such as the cost of natural gas and other fuels (e.g., propane or distillate oil), can be managed to some extent by means of futures contracts. However, the regional rates charged for both base load and peak electricity may decline periodically due to excess generating capacity or general economic recessions.

Our products could become less competitive if electric rates were to fall substantially in the future, noting that historically the rates have not had any sustained decline in price. Also, potential customers may perceive the unpredictable swings in natural gas and electricity prices as an increased risk of investing in on-site CHP, and may decide not to purchase CHP products.

We are exposed to credit risks with respect to some of our customers.

To the extent our customers do not advance us sufficient funds to finance our costs during the execution phase of our contracts, we are exposed to the risk that they will be unable to accept delivery or that they will be unable to make payment at the time of delivery.

We may make acquisitions or take other corporate strategic actions that could harm our financial performance.

To expedite development of our corporate infrastructure, particularly with regard to equipment installation and service functions, we anticipate the future acquisition of complementary businesses. Risks associated with such acquisitions include the disruption of our existing operations, loss of key personnel in the acquired companies, dilution through the issuance of additional securities, assumptions of existing liabilities, and commitment to further operating expenses. If any or all of these problems actually occur, acquisitions could negatively impact our financial performance and future stock value.

The Company has also announced a number of corporate strategic actions, including a proposed all-stock acquisition of ADGE as well as transactions related to the Company's ownership interest in certain joint ventures. If the execution or implementation of these transactions is not successful, it could adversely impact the Company's financial condition, cash flows and results of operations.

Risks Relating to Tecogen's Proposed Acquisition of ADGE

On November 1, 2016, Tecogen and Tecogen.ADGE Acquisition Corp. ("Merger Sub"), a wholly owned subsidiary of Tecogen formed for the purpose of the merger, entered into an Agreement and Plan of Merger (the "Merger Agreement") with ADGE. Tecogen's and ADGE's obligations to effect the Merger are subject to certain conditions, including that the Merger be approved by a vote of each of Tecogen's and ADGE's stockholders at separate special meetings of such stockholders. There is no assurance that such conditions will be satisfied or that Tecogen's or ADGE's stockholders will approve such proposals.

Tecogen's obligations and the obligations of ADGE to complete the transaction are subject to satisfaction or waiver of a number of conditions. Tecogen's obligations and the obligations of American DG are each subject to, among other conditions: (i) approval of the Merger by the respective stockholders of ADGE and Tecogen, (ii) approval of the listing on the Nasdaq Capital Market of the shares of Tecogen common stock to be issued in the Merger, upon official notice of issuance, (iii) the effectiveness of Tecogen's Form S-4 registration statement under the Securities Act of 1933, as amended, (iv) the absence of any applicable law or order that prohibits completion of the transaction, (v) the accuracy of the representations and warranties made in the Merger Agreement by Tecogen and ADGE, subject to certain materiality qualifications, and (vi) the performance in all material respects of the material obligations required to be performed by Tecogen and ADGE at or prior to the Merger effective time.

The satisfaction of the required conditions could delay the completion of the transaction for a significant period of time or prevent it from occurring. Any delay in completing the transaction could cause Tecogen or ADGE not to realize some or all of the benefits that Tecogen or ADGE expect to achieve if the transaction is successfully completed within its expected time frame. Further, there can be no assurance that the conditions to the closing of the transaction will be satisfied or waived or that the transaction will be completed.

The completion of the Merger is not conditioned on the receipt of an opinion of counsel to the effect that the transaction will qualify for the intended tax treatment, and neither Tecogen nor ADGE intends to request a ruling from the Internal Revenue Service regarding the United States federal income tax consequences of the transaction.

It is intended that, for United States federal income tax purposes, the Merger will qualify as a "reorganization" within the meaning of Section 368(a) of the Internal Revenue Code (the "intended tax treatment"). However, the completion of the transaction is not conditioned on the transaction qualifying for the intended tax treatment or on the receipt of an opinion of counsel to that effect, and whether or not the transaction will qualify for the intended tax treatment depends on facts that will not be known until the transaction is completed. No assurance can be given that the transaction will qualify for the intended tax treatment. In addition, neither Tecogen nor ADGE intends to request a ruling from the Internal Revenue Service regarding the United States federal income tax consequences of the transaction. Accordingly, even if Tecogen and ADGE conclude that the transaction qualifies for the intended tax treatment, no assurance can be given that the Internal Revenue Service will not challenge that conclusion or that a court would not sustain such a challenge.

It will not be known at the time of the special meeting whether the requirements for the transaction to qualify for the intended tax treatment will be met.

Failure to complete the transaction could negatively impact Tecogen's and ADGE's stock prices and Tecogen's and ADGE's future business and financial results.

If the transaction is not completed for any reason, including as a result of Tecogen's stockholders failing to approve the Merger, Tecogen's and ADGE's ongoing businesses may be adversely affected and, without realizing any of the benefits of having completed the transaction, Tecogen and ADGE would be subject to a number of risks, including the following:

- Tecogen and ADGE may experience negative reactions from the financial markets, including negative impacts on the stock prices and debt instruments of Tecogen or ADGE;
- Tecogen and ADGE may experience negative reactions from our respective customers and employees;
- Tecogen and ADGE will be required to pay certain costs relating to the transaction, whether or not the transaction is completed;
- the Merger Agreement places certain restrictions on the conduct of Tecogen's and ADGE's businesses prior to completion of the transaction. Such restrictions, the waiver of which is subject to the consent of the other party (not to be unreasonably withheld, conditioned or delayed), may prevent Tecogen and ADGE from making certain acquisitions or taking other specified actions during the pendency of the transaction;
- matters relating to the transaction (including integration planning) will require substantial commitments of time and resources by Tecogen's and ADGE's management, which would otherwise have been devoted to day-to-day operations and other opportunities that may have been beneficial to either us or Tecogen as an independent company.

Further, Tecogen and ADGE could be subject to litigation related to any failure to complete the transaction or related to any proceeding commenced against Tecogen or ADGE to enforce performance of their respective obligations under the Merger Agreement. If the transaction is not completed, these risks may materialize and may adversely affect Tecogen's and ADGE's businesses, financial condition, financial results and stock prices.

Although Tecogen expects that the transaction will result in synergies and other benefits to Tecogen, Tecogen may not realize those benefits because of difficulties related to integration, the realization of synergies, and other challenges.

Tecogen and ADGE have operated and, until completion of the transaction, will continue to operate, independently, and there can be no assurances that the respective businesses can be combined in a manner that allows for the achievement of substantial benefits. It is possible that there could be loss of Tecogen's or ADGE's key employees, the loss of customers, the disruption of either company's or both companies' ongoing businesses or unexpected issues, higher than expected costs and an overall post-completion process that takes longer than originally anticipated. Specifically, the following issues, among others, must be addressed in combining Tecogen's and ADGE's operations in order to realize the anticipated benefits of the transaction so the combined company performs as the parties hope:

- combining the companies' corporate functions;
- combining Tecogen's and ADGE's businesses in a manner that permits Tecogen to achieve the synergies anticipated to result from the transaction, the failure of which would result in the anticipated benefits of the transaction not being realized in the time frame currently anticipated or at all;
- maintaining existing agreements with customers, distributors, and vendors and avoiding delays in entering into new agreements with prospective customers, distributors, and vendors;
- determining whether and how to address possible differences in corporate cultures and management philosophies;
- integrating fully the companies' administrative and technology infrastructures; and
- effecting potential actions that may be required in connection with obtaining regulatory approvals.

In addition, at times the attention of certain members of either company's or both companies' management and resources may be focused on completion of the transaction and integration planning of the businesses of the two companies and diverted from day-to-day business operations, which may disrupt each company's ongoing business and the business of the combined company.

The transaction may not be accretive, and may be dilutive, to Tecogen's earnings per share, which may negatively affect the market price of Tecogen's common stock.

Tecogen currently expects the transaction to be accretive to its adjusted earnings per share within 12 months after the completion of the transaction. This expectation, however, is based on preliminary estimates that may materially change. In addition, Tecogen could fail to realize all the benefits anticipated in the transaction or experience delays or inefficiencies in realizing such benefits. Such factors could, combined with the issuance of shares of Tecogen common stock in the Merger, result in the transaction being dilutive to Tecogen's earnings per share, which could negatively affect the market price of shares of Tecogen's common stock.

Tecogen may incur substantial expenses related to the Merger.

Tecogen may incur substantial expenses in connection with consummating the Merger and integrating ADGE's business, operations, networks, systems, technologies, policies and procedures with its own. While Tecogen expects to incur a certain level of transaction and integration expenses, factors beyond Tecogen's control could affect the total amount or the timing of its integration expenses. Many of the expenses that will be incurred, by their nature, are difficult to estimate accurately at the present time. As a result, the transaction and integration expenses associated with the Merger could, particularly in the near term, exceed the savings that Tecogen expects to achieve from the elimination of duplicative expenses and the realization of economies of scale and cost savings related to the integration of the businesses following the completion of the Merger.

Risks Relating to Ownership of our Common Stock

Investment in our Common Stock is subject to price fluctuations and market volatility.

Historically, valuations of many small companies have been highly volatile. The securities of many small companies have experienced significant price and trading volume fluctuations, unrelated to the operating performance or the prospects of such companies. The market price of shares of our Common Stock could be subject to wide fluctuations in response to many risk factors listed in this section, and others beyond our control, including:

- results and timing of our product development;
- results of the development of our competitors' products;
- regulatory actions with respect to our products or our competitors' products;
- actual or anticipated fluctuations in our financial condition and operating results;
- actual or anticipated changes in our growth rate relative to our competitors;
- actual or anticipated fluctuations in our competitors' operating results or changes in their growth rate;
- competition from existing products or new products that may emerge;
- announcements by us or our competitors of significant acquisitions, strategic partnerships, joint ventures, collaborations, or capital commitments;
- issuance of new or updated research or reports by securities analysts;
- fluctuations in the valuation of companies perceived by investors to be comparable to us;
- share price and volume fluctuations attributable to inconsistent trading volume levels of our shares;
- additions or departures of key management or personnel;
- disputes or other developments related to proprietary rights, including patents, litigation matters, and our ability to obtain, maintain, defend or enforce proprietary rights relating to our products and technologies;
- announcement or expectation of additional financing efforts;
- sales of our Common Stock by us, our insiders, or our other stockholders; and
- general economic and market conditions.

Furthermore, the stock markets have experienced extreme price and volume fluctuations that have affected and continue to affect the market prices of equity securities of many companies. These fluctuations often have been unrelated or disproportionate to the operating performance of those companies. These broad market and industry fluctuations, as well as general economic, political, and market conditions such as recessions, interest rate changes, or international currency fluctuations, may negatively impact the market price of shares of our Common Stock. In addition, such fluctuations could subject us to securities class action litigation, which could result in substantial costs and divert our management's attention from other business concerns, which could potentially harm our business.

We experience significant fluctuations in revenues from quarter to quarter on our product sales.

We have low volume, high dollar sales for projects that are generally non-recurring, and therefore our sales have fluctuated significantly from period to period. For example, when compared to the previous quarter, our revenues in 2016 increased in each consecutive quarter. In 2015, our revenues increased during the first quarter, remained relatively flat in the second quarter, decreased in the third quarter, and slightly increased in the forth quarter. Fluctuations cannot be predicted because they are affected by the purchasing decisions and timing requirements of our customers, which are unpredictable.

We may be subject to litigation, which is expensive and could divert management attention.

Our share price may be volatile and in the past companies that have experienced volatility in the market price of their stock have been subject to an increased incidence of securities class action litigation. We may be the target of this type of litigation in the future. Securities litigation against us could result in substantial costs and divert our management's attention from other business concerns, which could seriously harm our business.

If securities or industry analysts do not publish research or publish inaccurate or unfavorable research about our business, our share price and trading volume could decline.

The trading market for our Common Stock will depend on the research and reports that securities or industry analysts publish about us or our business. We do not have any control over these analysts. There can be no assurance that analysts will cover us, or provide favorable coverage. If one or more analysts downgrade our stock or change their opinion of our stock, our share price would likely decline. In addition, if one or more analysts cease coverage of our company or fail to regularly publish reports on us, we could lose visibility in the financial markets, which could cause our share price or trading volume to decline.

Because our directors and executive officers are among our largest stockholders, they can exert influence over our business and affairs and have actual or potential interests that may depart from other stockholders or investors.

As of March 21, 2017, our directors and executive officers collectively beneficially own approximately 19.1% of our issued and outstanding common stock. Our directors and executive officers are entitled to cast an aggregate of approximately 3,522,833 votes on matters submitted to our stockholders for a vote or approximately 17.58% of the total number of votes entitled to be cast at a meeting of our stockholders. John Hatsopoulos, our co-Chief Executive Officer and a director, beneficially owns approximately 16.23% of our issued and outstanding common stock entitling him to cast an aggregate of approximately 3,252,395 votes on matters submitted to our stockholders for a vote or approximately 16.23% of the total number of votes entitled to be cast at a meeting of our stockholders. Additionally, the holdings of our directors and executive officers may increase in the future upon vesting or other maturation of exercise rights under any of the options or warrants they may hold or in the future be granted or if they otherwise acquire additional shares of our common stock. The interests of such persons may differ from the interests of our other stockholders. As a result, in addition to their board seats and offices, such persons will have influence over corporate actions requiring shareholder approval.

Such persons' stock ownership may discourage a potential acquirer from making a tender offer or otherwise attempting to acquire us, which in turn could reduce our stock price or prevent our stockholders from realizing a premium over our stock price.

Current stockholdings may be diluted if we make future equity issuances or if outstanding warrants or options are exercised for shares of our common stock.

"Dilution" refers to the reduction in the voting effect and proportionate ownership interest of a given number of shares of common stock as the total number of shares increases. Our issuance of additional stock, convertible preferred stock and convertible debt may result in dilution to the interests of shareholders and may also result in the reduction of your stock price. The sale of a substantial number of shares into the market, or even the perception that sales could occur, could depress the price of the common stock. Also, the exercise of warrants and options may result in additional dilution.

As of December 31, 2016, an aggregate of 1,367,918 shares of common stock are issuable upon exercise of outstanding warrants and options. The holders of outstanding warrants (and other convertible securities or derivatives, if any are subsequently issued) have the opportunity to profit from a rise in the market price of our common stock, if any, without assuming the risk of ownership, with a resulting dilution in the interests of other stockholders. We may find it more difficult to raise additional equity capital if it should be needed for our business while the options, warrants and convertible securities are outstanding. At any time at which the holders of the options, warrants or convertible securities might be expected to exercise or convert them, we would probably be able to obtain additional capital on terms more favorable than that provided by those securities.

Future sales of common stock by our existing stockholders may cause our stock price to fall.

The market price of our common stock could decline as a result of sales by our existing stockholders of shares of common stock in the market or the perception that these sales could occur. These sales might also make it more difficult for us to sell equity securities at a time and price that we deem appropriate and thus inhibit our ability to raise additional capital when it is needed.

Because we have not and do not intend to pay cash dividends, our stockholders receive no current income from holding our stock.

We have paid no cash dividends on our capital stock to date and we currently intend to retain our future earnings, if any, to fund the development and growth of our business. We currently expect to retain earnings for use in the operation and expansion of our business, and therefore do not anticipate paying any cash dividends in the foreseeable future. In addition, the terms of any future debt or credit facility may preclude us from paying any cash dividends. In addition, the Company's outstanding convertible note provides that the Company shall not declare, pay or authorize any dividend without the prior consent of the note holder. As a result, capital appreciation, if any, of our common stock could be the sole source of gain for our stockholders for the foreseeable future.

Failure to comply with the Nasdaq Capital Market continued listing requirements could lead to the commencement of delisting proceedings in accordance the Nasdaq rules. Delisting could limit investors' ability to effect transactions in the Company's securities and subject the stock to additional trading restrictions.

The Company's common stock is listed on the Nasdaq Capital Market, a national securities exchange. To maintain such listing, the Company is required to meet its continued listing requirements. If the Company is unable to maintain the listing of its stock on Nasdaq or another exchange for failure to comply with the continued listing requirements, including timely filing of Exchange Act reports and compliance with Nasdaq's corporate governance requirements, the Company and its security holders could face significant material adverse consequences including a limited availability of market quotations for its stock and a decreased ability to issue additional securities or obtain additional financing in the future.

Certain provisions of our charter and bylaws may discourage mergers and other transactions.

Certain provisions of our certificate of incorporation and bylaws may make it more difficult for someone to acquire control of us. These provisions may make it more difficult for stockholders to take certain corporate actions and could delay or prevent someone from acquiring our business. These provisions could limit the price that certain investors might be willing to pay for shares of our common stock. The ability to issue "blank check" preferred stock is a traditional anti-takeover measure. This provision may be beneficial to our management and the board of directors in a hostile tender offer, and may have an adverse impact on stockholders who may want to participate in such tender offer, or who may want to replace some or all of the members of the board of directors.

Our board of directors may issue additional shares of preferred stock without stockholder approval.

Our certificate of incorporation authorizes the issuance of up to 10,000,000 shares of preferred stock. Accordingly, our board of directors may, without shareholder approval, issue one or more new series of preferred stock with rights which could adversely affect the voting power or other rights of the holders of outstanding shares of common stock. In addition, the issuance of shares of preferred stock may have the effect of rendering more difficult or discouraging, an acquisition or change of control of us. Although we do not have any current plans to issue any shares of preferred stock, we may do so in the future.

Investor confidence in the price of our stock may be adversely affected if we are unable to comply with Section 404 of the Sarbanes-Oxley Act of 2002. As of the end of the period covered by this report, our principal executive officers and principal financial and accounting officer have concluded there is a material weakness in our disclosure controls and procedures and our internal control over financial reporting, which could harm our operating results or cause us to fail to meet our reporting obligations.

As an SEC registrant, we are subject to the rules adopted by the SEC pursuant to Section 404 of the Sarbanes-Oxley Act of 2002, which require us to include in our annual report on Form 10-K our management's report on, and assessment of the effectiveness of, our internal control over financial reporting ("management's report"). If we fail to achieve and maintain the adequacy of our internal control over financial reporting, there is a risk that we will not comply with all of the requirements imposed by Section 404. Moreover, effective internal control over financial reporting, particularly that relating to revenue recognition, is necessary for us to produce reliable financial reports and is important in helping to prevent financial fraud. Any of these possible outcomes could result in an adverse reaction in the financial marketplace due to a loss in investor confidence in the reliability of our financial statements, which ultimately could harm our business and could negatively impact the market price of our common stock. Investor confidence and the price of our common stock may be adversely affected if we are unable to comply with Section 404 of the Sarbanes-Oxley Act of 2002.

As of the end of the period covered by this Annual Report, December 31, 2016, our principal executive officers and principal accounting officer performed an evaluation of disclosure controls and procedures and concluded that our controls were not effective to provide reasonable assurance that information required to be disclosed by our Company in reports that we file under the Exchange Act, is recorded, processed, summarized and reported as when required. Management conducted an evaluation of our internal control over financial reporting and based on this evaluation, management concluded that the company's internal control over financial reporting was not effective as of December 31, 2016. The Company currently does not have personnel with a sufficient level of accounting knowledge, experience and training in the selection, application and implementation of generally acceptable accounting principles as it relates to complex transactions and financial reporting requirements. The Company also has a small number of employees dealing with general controls over information technology security and user access. This constitutes a material weakness in financial reporting. Any failure to implement effective internal controls could harm our operating results or cause us to fail to meet our reporting obligations. Inadequate internal controls could also cause investors to lose confidence in our reported financial information, which could have a negative effect on the trading price of our common stock, and may require us to incur additional costs to improve our internal control system.

In order to comply with public reporting requirements, we must continue to strengthen our financial systems and controls, and failure to do so could adversely affect our ability to provide timely and accurate financial statements.

Refinement of our internal controls and procedures will be required as we manage future growth successfully and operate effectively as a public company. Such refinement of our internal controls, as well as compliance with the Sarbanes-Oxley Act of 2002 and related requirements, will be costly and will place a significant burden on management. We cannot assure you that measures already taken, or any future measures, will enable us to provide accurate and timely financial reports, particularly if we are unable to hire additional personnel in our accounting and financial department, or if we lose personnel in this area. Any failure to improve our internal controls or other problems with our financial systems or internal controls could result in delays or inaccuracies in reporting financial information, or non-compliance with SEC reporting and other regulatory requirements, any of which could adversely affect our business and stock price.

The JOBS Act allows us to postpone the date by which we must comply with certain laws and regulations and reduces the amount of information provided by us in reports filed with the SEC. We cannot be certain if the reduced disclosure requirements applicable to emerging growth companies will make our Common Stock less attractive to investors.

We are and we will remain an "emerging growth company", as defined in the Jumpstart Our Business Startups Act of 2012, or the JOBS Act, until the earliest to occur of (i) the last day of the fiscal year during which our total annual gross revenues equal or exceed $1 billion (subject to adjustment for inflation), (ii) the last day of the fiscal year following the fifth anniversary of our initial public offering, (iii) the date on which we have, during the previous three-year period, issued more than $1 billion in non-convertible debt, or (iv) the date on which we are deemed a large accelerated filer under the Exchange Act.

For so long as we remain an emerging growth company we are not required to:

- have an auditor report on our internal controls over financial reporting pursuant to Section 404(b) of the Sarbanes-Oxley Act;
- comply with any requirement that may be adopted by the Public Company Accounting Oversight Board regarding mandatory audit firm rotation or a supplement to the auditor's report providing additional information about the audit and the financial statements (i.e., an auditor discussion and analysis);
- submit certain executive compensation matters to shareholder non-binding advisory votes;
- submit for shareholder approval golden parachute payments not previously approved; and
- disclose certain executive compensation related items such as the correlation between executive compensation and financial performance and comparisons of the Chief Executive Officer's compensation to median employee compensation, when such disclosure requirements are adopted.

In addition, Section 107 of the JOBS Act also provides that an emerging growth company can take advantage of the extended transition period provided in Section 7(a)(2)(B) of the Securities Act of 1933, as amended, or the Securities Act, for complying with new or revised accounting standards. An emerging growth company can therefore delay the adoption of certain accounting standards until those standards would otherwise apply to private companies. However, we have chosen to "opt out" of such extended transition period, and as a result, we will comply with new or revised accounting standards on the relevant dates on which adoption of such standards is required for non-emerging growth companies. Section 107 of the JOBS Act provides that our decision to opt out of the extended transition period for complying with new or revised accounting standards is irrevocable.

We cannot predict if investors will find our Common Stock less attractive because we may rely on some of these exemptions. If some investors find our Common Stock less attractive as a result, there may be a less active trading market for our Common Stock and our stock price may be more volatile. If we avail ourselves of certain exemptions from various reporting requirements, our reduced disclosure may make it more difficult for investors and securities analysts to evaluate us and may result in less investor confidence.

Item 1B. Unresolved Staff Comments.

Disclosure in response to this item is not required of a smaller reporting company.

Item 2. Properties.

Our headquarters is located in Waltham, Massachusetts, and consists of approximately 43,000 square feet of leased space, of which Tecogen occupies approximately 40,000 square feet of manufacturing, storage and office space. We sub-lease the remaining space to ADGE. Our lease will expire March 31, 2024. We believe that our facilities are appropriate and adequate for our current needs.

Our nine leased service centers can be broken into two different sizes. The larger of the two has office space to accommodate administrative, sales and engineering personnel, and warehouse space to stock parts in support of our service contracts.

As of December 31, 2016, the service centers that fit this larger category are based in Piscataway, New Jersey, Valley Stream and Buchanan, New York to service the Metro New York City and the Mid-Atlantic region. The San Francisco bay area and Northern California is served by such a center in Hayward, California. A portion of the Corporate headquarters in Waltham, Massachusetts is used in this manner to service Boston and northern New England.

The smaller type service center is a parts depot or warehouse for the stocking of parts in support of our service contracts. These centers are located in Los Angeles, California, Sterling Heights, Michigan, Newark, New York, and East Windsor, Connecticut.

Item 3. Legal Proceedings.

Tecogen is not currently a party to any material litigation arising from its operations, and the Company is not aware of any pending or threatened litigation against it from its operations that could have a material adverse effect on its business, operating results of financial condition. However, it is a party to a claim in the Superior Court of the Commonwealth of Massachusetts and named as a defendant in a case in the United States District Court for the District of Massachusetts, described below, related to the Merger.

Massachusetts Superior Court Action

On or about February 6, 2017, ADGE, John Hatsopoulos, George N. Hatsopoulos, Charles T. Maxwell, Deanna M. Petersen, Christine Klaskin, John Rowe, Joan Giacinti, Elias Samaras, Tecogen, and Merger Sub were served with a Verified Complaint by William C. May, individually and on behalf of the other shareholders of ADGE as a class. The complaint alleges the proposed Merger is subject to certain conflicts of interest; that ADGE's board failed to protect its shareholders by failing to conduct an auction or market check; that the Exchange Ratio undervalues ADGE's outstanding shares; that ADGE's directors breached their fiduciary duties in approving the Merger proposal; that the registration statement on Form S-4 contained material omissions; that Tecogen aided and abetted ADGE's board's breaches of its fiduciary duties; and other claims. The plaintiff is seeking preliminary and permanent injunctions related to the Merger, rescissory damages, compensatory damages, accounting, and other relief.

United States District Court Action

On or about February 15, 2017, a lawsuit was filed in the United States District Court for the District of Massachusetts by Lee Vardakas ("Vardakas"), individually and on behalf of other stockholders of ADGE, naming ADGE, John N. Hatsopoulos, George N. Hatsopoulos, Benjamin Locke, Charles T. Maxwell, Deanne M. Petersen, Christine M. Klaskin, John Rowe, Joan Giacinti, Elias Samaras, Tecogen Inc., Tecogen.ADGE Acquisition Corp., and Cassel Salpeter and Co., LLC, as defendants. In the complaint related to the matter, Vardakas claims: that the defendants violated Section 14(a)(1) of the Securities Exchange Act of 1934, as amended ("Exchange Act"), and Rule 14a-9 thereunder, in that the Form S-4 registration statement, as amended, filed by Tecogen contained certain material misstatements or omissions related to the valuation analysis in support of the fairness opinion, certain financial projections, and information related to certain conflicts of interest; that the directors and officers of ADGE have control person liability for the alleged material misstatements and omissions pursuant to Section 20(a) of the Exchange Act; that the directors of ADGE breached their fiduciary duties to ADGE's stockholders related to the merger transactions, including that they failed to take steps to obtain the highest possible consideration for ADGE stockholders in the transaction; that Mr. John Hatsopoulos and Mr. George Hatsopoulos, acting in concert and as a group, as controlling stockholders of ADGE, violated their fiduciary duties to the stockholders of ADGE; and that Mr. George Hatsopoulos, Tecogen,ADGE Acquisition Corp., Cassel Salpeter aided and abetted breaches of fiduciary duties by the directors and officers of ADGE. Vardakas is seeking a preliminary injunction, damages, costs and disbursements, including reasonable attorneys' fees, and such other relief as the court deems just and proper. As of the date of this report, none of the persons named as defendants in this action have been served with the complaint in the matter.

At this time the Company believes these cases are not material to its financial statements.

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.

Market

The Company's common stock has been listed on the NASDAQ Capital Market since May 2014 and trades under the ticker symbol TGEN. The following table sets forth, for the periods indicated, the high and low sale prices per share of common stock as quoted by the NASDAQ.

Year Ended December 31, 2016	High	Low
1st Quarter	$ 6.50	$ 2.80
2nd Quarter	5.75	3.50
3rd Quarter	5.20	4.00
4th Quarter	4.80	3.75

Year Ended December 31, 2015	High	Low
1st Quarter	$ 5.65	$ 4.55
2nd Quarter	5.19	3.90
3rd Quarter	4.40	2.80
4th Quarter	4.10	2.46

Holders

As of March 21, 2017, there were more than 300 beneficial owners of our Common Stock including 66 holders of record.

Dividends

To date, we have not declared or paid any dividends on our outstanding shares. We currently do not anticipate paying any cash dividends in the foreseeable future on our Common Stock. Although we intend to retain our earnings to finance our operations and future growth, our Board of Directors will have discretion to declare and pay dividends in the future. Payment of dividends in the future will depend upon our earnings, capital requirements and other factors, which our Board of Directors may deem relevant. Also, the Company's convertible note provides that the Company shall not declare, pay or authorize any dividend, without prior consent of the note holder. Further, under the terms of the Merger Agreement among the Company, Tecogen.ADGE Acquisition Corp., ADGE, we have agreed that between November 1, 2016, and the Merger effective time or the date the Merger Agreement is terminated, we may not make, declare or set aside any dividend or other distribution to our stockholders.

Issuer Purchases of Equity Securities

Not applicable.

Item 6. Selected Financial Data.

Disclosure in response to this item is not required of a smaller reporting company.

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

You should read the following discussion and analysis of our financial condition and results of operations together with our financial statements and related notes appearing elsewhere in this Annual Report on Form 10-K. Some of the information contained in this discussion and analysis or set forth elsewhere in this Annual Report on Form 10-K, including information with respect to our plans and strategy for our business, includes forward-looking statements that involve risks and uncertainties. You should review "Item 1A. Risk Factors" of this Annual Report on Form 10-K for a discussion of important factors that could cause actual results to differ materially from the results described in or implied by the forward-looking statements contained in the following discussion and analysis.

Overview

Tecogen designs, manufactures and sells industrial and commercial cogeneration systems that produce combinations of electricity, hot water, and air conditioning using automotive engines that have been specially adapted to run on natural gas. Cogeneration systems are efficient because in addition to supplying mechanical energy to power electric generators or compressors – displacing utility supplied electricity – they provide an opportunity for the facility to incorporate the engine's waste heat into onsite processes such as space and potable water heating. We produce standardized, modular, small-scale products, with a limited number of product configurations that are adaptable to multiple applications. We refer to these combined heat and power products as CHP (electricity plus heat) and MCHP (mechanical power plus heat).

Our products are sold directly to end-users by our in-house marketing team and by established sales agents and representatives. We have agreements in place with distributors and sales representatives, including ADGE. Our existing customers include hospitals and nursing homes, colleges and universities, health clubs and spas, hotels and motels, office and retail buildings, food and beverage processors, multi-unit residential buildings, laundries, ice rinks, swimming pools, factories, municipal buildings, and military installations. We have an installed base of more than 2,500 units. Many of these have been operating for almost 30 years.

Although we may, from time to time, have one or a few customers who may represent more than 10% of our product revenue for a given year, we are not dependent on the recurrence of revenue from those customers. Our product revenue is such that customers may make a large purchase once and may not ever make a purchase again. Our equipment is built to last 20 or more years, therefore, our product revenue model is not dependent on recurring sales transactions from the same customer. Our service revenue, however, lends itself to recurring revenue from particular customers; although we currently do not have any service revenue customers who make up more than 10% of our total revenues on an annual basis.

For the last two fiscal years, more than one third of our revenue was generated from long-term maintenance contracts, or service contracts, which provide us with a predictable revenue stream, especially during the summer months. We have a slight surge of activity from May through September as our "chiller season" is in full swing. Our service revenue has grown from year to year since 2005, with our New York City/New Jersey, New England and to some extent California territories experiencing the majority of the growth. This growth is consistent with the sale of new units into those territories. Our service margins are generally predictable as we service hundreds of long-term contracts with relatively low dollar, high volume sales.

Our product revenue is derived from the sale of the various cogeneration modules, such as the InVerde 100, the CM-75 and the CM-60, Ilios heat pumps, and the three TECOCHILL chiller models, such as the smaller ST, the larger DT and the RT (roof-top) units. The sales cycle for each module varies widely, and can range from as short as a month to as long as a year or more. Furthermore, since our products and their installation are costly, they are considered a major capital improvement and customers may be slow in making their buying decisions. Our products sales are high dollar value, low volume transactions. Therefore our product revenue can be difficult to predict and the expected margin varies.

Our cogeneration, heat pump, and chiller modules are built to order and revenue is recognized upon shipment. The lead time to build and deliver a unit depends on its customized configuration and is approximately 12 to 14 weeks for a chiller and 6 to 8 weeks for a cogeneration or heat pump from time of purchase order. As revenue is recognized upon shipment, our work-in-process is an important factor in understanding our financial condition in any given quarter.

Recent Developments

In December 2015, the Company entered into a joint venture agreement with a group of European strategic investors relating to the formation of Ultra Emissions Technologies Ltd. ("Ultra Emissions"), organized under the laws of the Island of Jersey, Channel Islands, a joint venture company. Ultra Emissions was organized to develop and commercialize Tecogen's patented technology, Ultera ®, for the automotive market. The technology is designed to reduce harmful emissions generated by engines using fossil fuels. Tecogen contributed an exclusive license for use of Ultera in the automotive space to the joint venture while the strategic partners have committed to financing the initial research, development and testing of a viable product. Although Tecogen originally owned 50% of the joint venture, due to investment by outside investors, as of December 31, 2016, Tecogen's ownership interest is 43%.

In April 2016 pursuant to share exchange agreements, holders of the non-controlling interest in Ilios agreed to exchange every 7.86 of their restricted Ilios shares of common stock for 1 share of the Company's common stock. In addition, the Company granted each exchanging shareholder registration rights with respect to the Company's common stock such shareholder received in exchange for such shareholder's Ilios shares. Thereafter, the Company effected a statutory merger of Tecogen and Ilios. Ilios remains a brand name for our line of heat pump products.

In May 2016, Tecogen entered into a joint venture agreement, (the "JV Agreement") with Tedom a.s., a European combined heat and power product manufacturer incorporated in the Czech Republic ("Tedom") and Tedom's subsidiary, Tedom USA, Inc., a Delaware corporation. Pursuant to the JV Agreement, the parties formed TTcogen LLC, a Delaware limited liability company ("TTcogen"), through which the joint venture is operated. TTcogen offers Tedom's line of Combined Heat and Power ("CHP") products to the United States via Tecogen's nationwide sales and service network consisting of 27 CHP modules ranging in size from 35 kW up to 4 MW and fully capable of running on a variety of fuel feedstocks (including natural gas, propane, and biofuel).

Critical Accounting Policies

The preparation of financial statements and related disclosures in conformity with accounting principles generally accepted in the United States of America requires management to make judgments, assumptions and estimates that affect the amounts reported. Note 2 of the Notes to Consolidated Financial Statements describes the significant accounting policies used in the preparation of the consolidated financial statements. Some of these significant accounting policies are considered to be critical accounting policies, as defined below.

A critical accounting policy is defined as one that is both material to the presentation of the Company's financial statements and requires management to make difficult, subjective or complex judgments that could have a material effect on the Company's financial condition and results of operations. Specifically, critical accounting estimates have the following attributes: 1) the Company is required to make assumptions about matters that are highly uncertain at the time of the estimate; and 2) different estimates the Company could reasonably have used, or changes in the estimate that are reasonably likely to occur, would have a material effect on the Company's financial condition or results of operations. Estimates and assumptions about future events and their effects cannot be determined with certainty. The Company bases its estimates on historical experience and on various other assumptions believed to be applicable and reasonable under the circumstances. These estimates may change as new events occur, as additional information is obtained and as the Company's operating environment changes. These changes have historically been minor and have been included in the consolidated financial statements as soon as they became known. In addition, management is periodically faced with uncertainties, the outcomes of which are not within its control and will not be known for prolonged periods of time. These uncertainties are discussed in Item 1A, "Risk Factors" above. Based on a critical assessment of its accounting policies and the underlying judgments and uncertainties affecting the application of those policies, management believes that the Company's consolidated financial statements are fairly stated in accordance with generally accepted accounting principles, and present a meaningful presentation of the Company's financial condition and results of operations.

Management believes that the following are critical accounting policies:

Accounts Receivable

Accounts receivable are stated at the amount management expects to collect from outstanding balances. An allowance for doubtful accounts is provided for those accounts receivable considered to be uncollectible based upon historical experience and management's evaluation of outstanding accounts receivable at the end of the year. Bad debts are written off against the allowance when identified.

Inventory

Raw materials, work in process, and finished goods inventories are stated at the lower of cost, as determined by the average cost method, or market. The Company periodically reviews inventory quantities on hand for excess and/or obsolete inventory based primarily on historical usage, as well as based on estimated forecast of product demand. Any reserves that result from this review are charged to cost of sales.

Revenue Recognition

Revenue is recognized when persuasive evidence of an arrangement exists, delivery has occurred or services have been rendered, the price is fixed or determinable and collectability is reasonably assured. Generally, sales of cogeneration and chiller units and parts are recognized when shipped and services are recognized over the term of the service period. Payments received in advance of services being performed are recorded as deferred revenue.

The Company recognizes revenue in certain circumstances before delivery has occurred (commonly referred to as bill and hold transactions). In such circumstances, among other things, risk of ownership has passed to the buyer, the buyer has made a written fixed commitment to purchase the finished goods, the buyer has requested the finished goods be held for future delivery as scheduled and designated by them, and no additional performance obligations exist by the Company. For these transactions, the finished goods are segregated from inventory and normal billing and credit terms granted.

For those arrangements that include multiple deliverables, the Company first determines whether each service or deliverable meets the separation criteria of FASB ASC 605-25, *Revenue Recognition—Multiple-Element Arrangements*. In general, a deliverable (or a group of deliverables) meets the separation criteria if the deliverable has stand-alone value to the customer and, if the arrangement includes a general right of return, delivery or performance of the undelivered item(s) is considered probable and substantially in control of the Company. Each deliverable that meets the separation criteria is considered a separate "unit of accounting". The Company allocates the total arrangement consideration to each unit of accounting using the relative selling price method. The amount of arrangement consideration that is allocated to a delivered unit of accounting is limited to the amount that is not contingent upon the delivery of another unit of accounting.

When vendor-specific objective evidence or third-party evidence is not available, adopting the relative fair value method of allocation permits the Company to recognize revenue on specific elements as completed based on the estimated selling price. The Company generally uses internal pricing lists that determine sales prices to external customers in determining its best estimate of the selling price of the various deliverables in multiple-element arrangements. Changes in judgments made in estimating the selling price of the various deliverables could significantly affect the timing or amount of revenue recognition. The Company enters into sales arrangements with customers to sell its cogeneration and chiller units and related service contracts and occasionally installation services. Based on the fact that the Company sells each deliverable to other customers on a stand-alone basis, the Company has determined that each deliverable has a stand-alone value. Additionally, there are no rights of return relative to the delivered items; therefore, each deliverable is considered a separate unit of accounting.

After the arrangement consideration has been allocated to each unit of accounting, the Company applies the appropriate revenue recognition method for each unit of accounting based on the nature of the arrangement and the services included in each unit of accounting. Cogeneration and chiller units are recognized when shipped and services are recognized over the term of the applicable agreement, or as provided when on a time and materials basis.

In some cases, our customers may choose to have the Company engineer and install the system for them rather than simply purchase the cogeneration and/or chiller units. In this case, the Company accounts for revenue, or turnkey revenue, and costs using the percentage-of-completion method of accounting. Under the percentage-of-completion method of accounting, revenues are recognized by applying percentages of completion to the total estimated revenues for the respective contracts. Costs are recognized as incurred. The percentages of completion are determined by relating the actual cost of work performed to date to the current estimated total cost at completion of the respective contracts. When the estimate on a contract indicates a loss, the Company's policy is to record the entire expected loss, as required by generally accepted accounting principles. The excess of contract costs and profit recognized to date on the percentage-of-completion accounting method in excess of billings is recorded as unbilled revenue. Billings in excess of related costs and estimated earnings are recorded as deferred revenue.

Recent Accounting Pronouncements

In May 2014, the FASB amended its standards related to revenue recognition. This amendment replaces all existing revenue recognition guidance and provides a single, comprehensive revenue recognition model for all contracts with customers. The standard contains principles that we will apply to determine the measurement of revenue and timing of when it is recognized. The underlying principle is that we will recognize revenue in a manner that depicts the transfer of goods or services to customers at an amount that we expect to be entitled to in exchange for those goods or services. The guidance provides a five-step analysis of transactions to determine when and how revenue is recognized. Other major provisions include capitalization of certain contract costs, consideration of the time value of money in the transaction price and allowing estimates of variable consideration to be recognized before contingencies are resolved in certain circumstances. The amendment also requires additional disclosure about the nature, amount, timing and uncertainty of revenue and cash flows arising from customer contracts, including significant judgments and changes in judgments and assets recognized from costs incurred to fulfill a contract. The standard allows either full or modified retrospective adoption effective for our annual and interim periods beginning January 1, 2018. Management is in the process of evaluating the impact the amendment will have on our Consolidated Financial Statements. While a final decision has not been made, we are currently planning to adopt the standard using the modified retrospective approach.

In February 2016, the FASB issued ASU No. 2016-02, Leases (Topic 842), which requires companies to recognize all leases as assets and liabilities on the consolidated balance sheet. This ASU retains a distinction between finance leases and operating leases, and the classification criteria for distinguishing between finance leases and operating leases are substantially similar to the classification criteria for distinguishing between capital leases and operating leases in the current accounting literature. The result of retaining a distinction between finance leases and operating leases is that under the lessee accounting model in Topic 842, the effect of leases in a consolidated statement of comprehensive income and a consolidated statement of cash flows is largely unchanged from previous GAAP. The amendments in this ASU are effective for fiscal years beginning after December 15, 2018, including interim periods within those fiscal years. Earlier application is permitted. The Company is currently evaluating the impact that the adoption of this ASU will have on its Consolidated Financial Statements.

Emerging Growth Company

Section 107 of the JOBS Act provides that an emerging growth company can take advantage of the extended transition period provided in Section 7(a)(2)(B) of the Securities Act for complying with new or revised accounting standards. However, we chose to "opt out" of any extended transition period, and as a result we will comply with new or revised accounting standards on the relevant dates on which adoption of such standards is required for non-emerging growth companies. Section 107 of the JOBS Act provides that our decision to opt out of the extended transition period for complying with new or revised accounting standards is irrevocable.

Results of Operations

The following table sets forth for the periods indicated, the percentages of the net sales represented by certain items reflected in the Company's statements of operations.

	Years ended December 31,	
	2016	2015
Revenues	100.0 %	100.0 %
Cost of Sales	62.0	64.4
Gross Profit	38.0	35.6
General and administrative	32.6	37.3
Selling	6.7	7.9
Research and development	2.7	2.8
Loss from operations	(4.0)	(19.2)
Total other expense, net	(0.7)	(0.7)
Consolidated net loss	(4.7)	(13.2)
Less: Loss attributable to the noncontrolling interest	0.3	0.3
Net loss attributable to Tecogen Inc.	(4.4)%	(19.5)%

Year Ended December 31, 2016 Compared to Year Ended December 31, 2015

Revenues

Revenues in 2016 were $24,490,386 compared to $21,442,657 in 2015, an increase of $3,047,729 or 14.2%. This increase is the result of the increased sales in both equipment and services. Product revenues in 2016 were $10,722,285 compared to $10,055,237 in 2015, an increase of $667,048 or 6.6%. This increase from the year ended December 31, 2015 to 2016 resulted from a decrease in cogeneration sales of $88,263 which was more than offset by an increase in chiller sales of $755,311. The focus on chiller and heat pump sales efforts in 2016 yielded the increase in sales. Our product mix, as well as product revenue, can vary significantly from period to period as our products are high dollar, low volume sales in which revenue is recognized upon shipment.

Revenues derived from our service centers, including installation activities, in 2016 were $13,768,101 compared to $11,387,420 for the same period in 2015, an increase of $2,380,681 or 20.9%. Our service operation grows with the sales of installed systems, since the majority of our product sales are accompanied by a service contract or time and materials agreements. As a result our "fleet" of units being serviced by our service department grows with product sales. In addition, our service department revenue has increased due to turnkey projects of $5,227,054 in 2016 compared to $3,555,239 in 2015.

Cost of Sales

Cost of sales in 2016 was $15,189,708 compared to $13,809,431 in 2015, an increase of $1,380,277 or 10.0%. Our gross profit margin was 38.0% in 2016 compared to 35.6% in 2015, an increase of 6.7%. The increase in gross profit margin is attributable to better margins on turnkey projects year over year and improving production efficiencies in material, labor and factory utilization. The factory continues to improve product service cycles, ease of maintenance, and component sourcing in to order to continuously improve efficiencies in our processes.

Operating Expenses

Operating expenses increased in 2016 to $10,298,129 compared to $10,276,576 in 2015, an increase of $21,553 or 0.2%. This increase was the net of a decrease in general and administrative expense of $3,151, a decrease of $50,775 in selling expense and an increase in research and development expense of $75,479. Selling expenses decreased in 2016 to $1,636,704 compared to $1,687,479 in 2015, a decrease of $50,775 or 3.0%. This decrease was due to a decrease in marketing expenses. Research and development expenses increased in 2016 to $667,064 compared to $591,585 in 2015, an increase of $75,479 or 12.8%. The increase in research and development expenses was due to development of our real-time equipment monitoring system. There has not been a change in focus with research and development. Management continues its efforts to improve the product's performance and cost.

Loss from Operations

Loss from operations for the year ended December 31, 2016 was $997,451 compared to $2,643,350 in 2015, a decrease of $1,645,899 or 62.3%. The decrease in the loss was due to the continuing effort to reduce material costs and control operating expenses as well as to revenue growth.

Other Income (Expense), net

Other expense, net, for the year ended December 31, 2016 was $163,794 compared to $157,610 for the same period in 2015. Other income (expense) includes interest income and other income of $11,988, net of interest expense on notes payable of $175,782 in 2016. For the same period in 2015, interest and other income was $14,334 and interest expense was $171,944. The interest income and expense is not expected to significantly change in the near future.

Noncontrolling Interest

The noncontrolling interest share in the losses of Ilios was $64,962 for the year ended December 31, 2016 compared to $73,547 for the same period in 2015, a decrease of $8,585 or 11.7%. The noncontrolling interest losses ended with the private placement exchange of the outstanding shares of Ilios. On April 11, 2016, this exchange was completed as Ilios merged into Tecogen through a statutory merger.

Net Loss Attributable to Tecogen, Inc.

Net loss for the year ended December 31, 2016 was $1,096,283 compared to $2,727,413 for the same period in 2015. The decrease in the loss of $1,631,130 or 59.8% was due to the increase in gross profit offset partially by the increase in operating expenses as discussed above.

Net Loss per share

Net loss per share for the year ended December 31, 2016 was $0.06 compared to $0.16 for the same period in 2015. The decrease in the loss of $0.10 or 62.5% was due to the increase in gross profit offset partially by the increase in operating expenses as discussed above. The basic weighted average shares outstanding for the year ended December 31, 2016 was 19,295,922 compared to 16,860,453 for the same period in 2015. This increase of 2,435,469 or 14.4% shares amounted to less than $0.01 per share in the decrease of the net loss per share.

Liquidity and Capital Resources

Consolidated working capital at December 31, 2016 was $14,436,452, compared to $14,027,370 at December 31, 2015, an increase of $409,082 or 2.9%. Included in working capital were cash and cash equivalents of $3,721,765 and $0 in restricted short-term investments at December 31, 2016, compared to $5,486,526 in cash and cash equivalents and $294,802 of restricted short-term investments at December 31, 2015. These increases in consolidated working capital and decrease in cash are due to increased accounts receivable, unbilled revenue and an increase in inventory partially offset by a decrease in amount due to a related party and increases in other assets.

Net cash used in operating activities for the years ended December 31, 2016 and 2015 were $2,717,856 and $4,733,759, respectively, a decrease of $2,015,903 or 42.6%. As discussed above, the Company had a decreased net loss during 2016 when compared to 2015. Our accounts receivable balance increased to $8,630,418 at December 31, 2016 compared to $5,286,863 at December 31, 2015, an increase of $3,343,555 due to timing of billing, shipments, and collections. Unbilled revenues also increased by $1,197,254 in connection with turnkey projects as some revenues are recognized prior to contractual milestones for invoicing. Our inventory decreased to $4,774,264 as of December 31, 2016 compared to $5,683,043 as of December 31, 2015, a decrease of $935,779. This decrease was due to continued efforts in materials management. Prepaid expenses as of December 31, 2016 increased to $401,876 as compared to $353,105, an increase of $48,771.

Accounts payable increased to $3,367,481 as of December 31, 2016 from $3,311,809 at December 31, 2015, an increase of $55,672. The increase in accounts payable is related to increased activities in manufacturing. Accrued expenses increased to $1,378,258 as of December 31, 2016 compared to $1,066,860 as of December 31, 2015, an increase of $311,398. Deferred revenues increased to $1,336,040 as of December 31, 2016 from $1,270,103 at December 31, 2015, an increase of $65,937. This increase in deferred revenues relates to an increase in prepaid service contracts and an increase in projects billed but not completed.

Our related party balance was a net receivable of $260,988 as of December 31, 2016 and $1,177,261 as of December 31, 2015. This change is due to the acquisition of Ilios by Tecogen and is not necessarily indicative of any significant change in operations.

During 2016 our cash flows used in investing activities were $2,259,390, and included purchases of property and equipment of $139,725, expenditures related to intangible assets such as patents and product certifications of $119,665, and an investment of $2,000,000 in Ultra Emissions.

During 2016 our cash flows provided by financing activities were $3,212,485 resulting from the exercise of warrants of $2,700,000, proceeds from the amendment of the notes payable of $150,000, and proceeds from the exercising of stock options of $395,572, offset by the cost of the debt of $2,034 and cost of $31,053 from the share issuance in the Ilios consolidation.

Tecogen's total product and installation backlog as of December 31, 2016 was $11.1 million compared to $11.6 million as of December 31, 2015. This backlog meets management's expectation of exceeding a backlog of $10 million. Backlog does not include maintenance contract service revenues.

At December 31, 2016, our commitments included various leases for office and warehouse facilities of $3,902,346 to be paid over several years through 2024. The source of funds to fulfill these commitments will be provided from operations.

On June 15, 2015, the Company entered into a non-revolving line of credit agreement, or the Agreement, with John N. Hatsopoulos, the Company's Co-Chief Executive Officer. Under the terms of the Agreement, Mr. Hatsopoulos has agreed to lend the Company up to an aggregate of $2,000,000, with a withdrawal limit of $250,000 per financial calendar quarter, at the written request of the Company. Any amounts borrowed by the Company pursuant to the Agreement will bear interest at 6% per year. Interest is due and payable quarterly in arrears. The term of the Agreement is from July 1, 2015 to July 1, 2017. Repayment of the principal amount borrowed pursuant to the Agreement will be due on July 1, 2017, or the Maturity Date. The Company has not yet borrowed any amounts pursuant to the Agreement.

Based on our current operating plan, we believe existing resources, including cash and cash flows from operations and funds raised in subsequent private placements, will be sufficient to meet our working capital requirements for the next twelve months. As we continue to grow our business, we expect that our cash requirements will increase. As a result, we may need to raise additional capital through a debt financing or an equity offering to meet our operating and capital needs for future growth.

Seasonality

We expect that the majority of our heating systems sales will be operational for the winter and the majority of our chilling systems sales will be operational for the summer. Our cogeneration sales are not generally affected by the seasons. Our service team does experience higher demand in the warmer months when cooling is required. These chiller units are generally shut down in the winter and started up again in the spring. This chiller "busy season" for the service team generally runs from May through the end of September.

Off Balance Sheet Arrangements

On April 10, 2015, the performance obligation tied to a performance bond previously collateralized by an account owned by John N. Hatsopoulos was relieved and the credit facility was canceled. As of December 31, 2015, $294,802 a letter of credit was outstanding under a revolving bank credit facility needed to collateralize a performance bond on a certain installation project. The bank required collateral to issue the letter of credit which the company provided in the form of restricted cash. This revolving bank credit facility was terminated on January 28, 2016 as the performance bond obligations were cleared. As of December 31, 2016, we no longer have off balance sheet arrangements.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk.

Not applicable.

Item 8. Financial Statements and Supplementary Data.

The information required by this item is incorporated from Item 15 and pages F-1 through F-22 of this Annual Report on Form 10-K.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure.

None

Item 9A. Controls and Procedures.

Management's Evaluation of Disclosure Controls and Procedures:

Our disclosure controls and procedures are designed to provide reasonable assurance that the control system's objectives will be met. Our management, including our Co-Chief Executive Officers and Chief Financial Officer, after evaluating the effectiveness of our disclosure controls and procedures as of December 31, 2016, or the "Evaluation Date", have concluded that as of the Evaluation Date, our disclosure controls and procedures were not effective due to material weaknesses in financial reporting relating to lack of personnel with a sufficient level of accounting knowledge and a small number of employees dealing with general controls over information technology. At the present time, our management has decided that, considering the employees involved and the control procedures in place, there are risks associated with the above, but the potential benefits of adding additional employees to mitigate these weaknesses do not justify the expenses associated with such increases. Management will continue to evaluate the above weaknesses, and as the Company grows and resources become available, the Company plans to take the necessary steps in the future to remediate the weaknesses.

For these purposes, the term disclosure controls and procedures of an issuer means controls and other procedures of an issuer that are designed to ensure that information required to be disclosed by the issuer in the reports that it files or submits under Section 13(a) or 15(d) of the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the SEC's rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by an issuer in the reports that it files or submits under Section 13(a) or 15(d) of the Exchange Act is accumulated and communicated to the issuer's management, including its principal executive and principal financial officers, or persons performing similar functions, as appropriate to allow timely decisions regarding required disclosure.

Management's Annual Report on Internal Control over Financial Reporting:

The management of the Company is responsible for establishing and maintaining adequate internal control over financial reporting as defined in Rules 13a-15(f) under the Securities Exchange Act of 1934, as amended.

The Company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles in the United States of America. The Company's internal controls over financial reporting include those policies and procedures that:

- pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and dispositions of the assets of the Company;
- provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with U.S. generally accepted accounting principles,
- provide reasonable assurance that receipts and expenditures of the Company are being made only in accordance with authorizations of management and directors of the Company; and
- provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the Company's assets that could have a material effect on the consolidated financial statements.

Because of its inherent limitations, internal control over financial reporting, no matter how well designed, may not prevent or detect misstatements. Accordingly, even effective internal control over financial reporting can provide only reasonable assurance with respect to financial statement preparation. Also, the assessment of the effectiveness of internal control over financial reporting was made as of a specific date. Projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Management, including our Co-Chief Executive Officers and Chief Financial Officer, conducted an evaluation of our internal control over financial reporting based on the framework and criteria established in Internal Control—Integrated Framework (2013), issued by the Committee of Sponsoring Organizations of the Treadway Commission. This evaluation included review of the documentation of controls, evaluation of the design effectiveness of controls, testing of the operating effectiveness of controls and a conclusion of this evaluation. Based on this evaluation, management concluded that the Company's internal control over financial reporting was not effective as of December 31, 2016.

At December 31, 2016, the Company employed 83 active full-time employees and 3 part-time employees. The Company currently does not have personnel with a sufficient level of accounting knowledge, experience and training in the selection, application and implementation of generally accepted accounting principles as it relates to complex transactions and the financial reporting requirements for such transactions. The Company also has a small number of employees dealing with general controls over information technology security and user access. This constitutes a material weakness in financial reporting. At this time, management has decided that considering the employees involved and the control procedures in place, there are risks associated with the above, but the potential benefits of adding additional employees to mitigate these weaknesses, does not justify the expenses associated with such increases. Management will continue to evaluate the above weaknesses.

Our management, including our Co-Chief Executive Officers and Chief Financial Officer, does not expect that our Disclosure Controls or our internal control over financial reporting will prevent or detect all errors and all fraud. A control system, no matter how well designed and operated, can provide only reasonable, not absolute, assurance that the control system's objectives will be met. The design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. Further, because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that misstatements due to error or fraud will not occur or that all control issues and instances of fraud, if any, within the Company have been detected. These inherent limitations include the realities that judgments in decision-making can be faulty and that breakdowns can occur because of a simple error or mistake. Controls can also be circumvented by the individual acts of some persons, by collusion of two or more people, or by management override of the controls. The design of any system of controls is based in part on certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions. Projections of any evaluation of controls effectiveness to future periods are subject to risks. Over time, controls may become inadequate because of changes in conditions or deterioration in the degree of compliance with policies or procedures.

This annual report does not include an attestation report of the Company's registered independent public accounting firm regarding internal control over financial reporting. Management's report was not subject to attestation by the Company's registered independent public accounting firm pursuant to rules of the Securities and Exchange Commission that permit the Company to provide only management's report in this Annual Report on Form 10-K.

Changes in Internal Control Over Financial Reporting

There has been no change to the Company's internal control over financial reporting (as such term is defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) during the fourth quarter of the fiscal year ended December 31, 2016, that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting.

Item 9B. Other Information.

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance.

The information required by this item is incorporated herein by reference to our 2017 Proxy Statement to be filed with the SEC.

Item 11. Executive Compensation.

The information required by this item is incorporated herein by reference to our 2017 Proxy Statement to be filed with the SEC.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters.

The information required by this item is incorporated herein by reference to our 2017 Proxy Statement to be filed with the SEC.

Item 13. Certain Relationships and Related Transactions, and Director Independence.

The information required by this item is incorporated herein by reference to our 2017 Proxy Statement to be filed with the SEC.

Item 14. Principal Accountant Fees and Services.

The information required by this item is incorporated herein by reference to our 2017 Proxy Statement to be filed with the SEC.

PART IV

Item 15. Exhibits and Financial Statement Schedules.

The following consolidated financial statements and the related notes thereto of Tecogen Inc. and the Accounting Firm thereon are filed as part of this Annual Report on Form 10-K.

(a) REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

INDEX TO FINANCIAL STATEMENTS AND FINANCIAL STATEMENTS SCHEDULES:

Consolidated Balance Sheets as of December 31, 2016 and December 31, 2015

Consolidated Statements of Operations for the years ended December 31, 2016 and December 31, 2015

Consolidated Statements of Stockholders' Equity for the years ended December 31, 2016 and December 31, 2015

Consolidated Statements of Cash Flows for the years ended December 31, 2016 and December 31, 2015

Notes to Consolidated Financial Statements

All other schedules for which provision is made in the applicable accounting regulations of the SEC are not required under the related instructions, or are inapplicable, and therefore have been omitted.

(b) Exhibits

The exhibits to the Registration Statement are listed in the Exhibit Index attached hereto and incorporated by reference herein.

Item 16. Form 10K Summary.

The Company has determined not to include a summary of the information required by this Item 16 of the Form 10-K.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

TECOGEN INC.
(Registrant)

Dated: March 22, 2017	By: /s/ John N. Hatsopoulos Co-Chief Executive Officer (Principal Executive Officer)
Dated: March 22, 2017	By: /s/ Benjamin Locke Co-Chief Executive Officer (Principal Executive Officer)
Dated: March 22, 2017	By: /s/ David A. Garrison Chief Financial Officer, Treasurer and Secretary (Principal Financial and Accounting Officer)

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints John N. Hatsopoulos and David A. Garrison, or either of them, each with the power of substitution and re-substitution, as his or her attorney-in-fact and agents, for him or her and in his or her name, place and stead, in any and all capacities, to sign any and all amendments to this Annual Report on Form 10-K for the year ended December 31, 2016, and to file the same, with all exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming that all said attorneys-in-fact and agents, or any of them or their or his or her substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacity and on the dates indicated.

Signature	Title	Date
/s/ Angelina M. Galiteva Angelina M. Galiteva	Chairman of the Board	March 22, 2017
/s/ John N. Hatsopoulos John N. Hatsopoulos	Director and Co-Chief Executive Officer (Principal Executive Officer)	March 22, 2017
/s/ Benjamin Locke Benjamin Locke	Co-Chief Executive Officer (Principal Executive Officer)	March 22, 2017
/s/ David A. Garrison David A. Garrison	Chief Financial Officer, Treasurer and Secretary (Principal Financial and Accounting Officer)	March 22, 2017
/s/ Charles T. Maxwell Charles T. Maxwell	Director	March 22, 2017
Ahmed F. Ghoniem	Director	
/s/ Keith Davidson Keith Davidson	Director	March 22, 2017

EXHIBIT INDEX

Exhibit Number	Description
2.1[n]	Agreement and Plan of Merger, dated as of November 1, 2016, by and among Tecogen Inc, American DG Energy Inc. and ADGE.Tecogen Merger Sub Inc.
3.1[b]	Amended and Restated Certificate of Incorporation.
3.2[b]	Amended and Restated Bylaws.
4.1[b]	Specimen Common Stock Certificate of Tecogen Inc.
4.2[a]	Form of Restricted Stock Purchase Agreement.
4.3+[b]	Form of Stock Option Agreement.
4.5[i]	Warrant to Subscribe for Shares between Ultra Emissions Technology, Ltd and Tecogen.
4.6[m]	Tecogen's Ultra Emissions Technology, Ltd. Warrant signed August 2, 2016.
10.1+[d]	Tecogen Inc. 2006 Stock Incentive Plan, as amended and restated on June 30, 2014 with stockholder approval on July 15, 2014.
10.2[a]	Form of Tecogen Inc. Subscription Agreement for private placement of Common Stock.
10.7[b]	Lease Agreement between Atlantic-Waltham Investment II, LLC, and Tecogen Inc., dated May 14, 2008.
10.8[b]	Second Amendment to Lease Agreement between Atlantic-Waltham Investment II, LLC, and Tecogen Inc., dated January 16, 2013.
10.11[b]	Form of Sales Representative Agreement.
10.12#[b]	Asset Purchase Agreement as of January 8, 2013 between Tecogen Inc. and Danotek, LLC.
10.13#[b]	Exclusive License Agreement between Tecogen Inc. and the Wisconsin Alumni Research Foundation, dated February 5, 2007.
10.20[b]	Form of Common Stock Purchase Agreement.
10.21[b]	Senior Convertible Promissory Note, dated December 23, 2013, by Tecogen Inc. in favor of Michaelson Capital Special Finance Fund LP.
10.23[b]	Revolving Line of Credit Agreement between Tecogen Inc. and John N. Hatsopoulos, dated March 26, 2014.
10.24[d]	Facilities and Support Services Agreement between American DG Energy Inc. and Tecogen Inc., dated August 8, 2014.
10.26[h]	Non-Revolving Line of Credit Agreement between Tecogen Inc. and John N. Hatsopoulos, dated July 1, 2015.
10.28[e]	Form of Common Stock Purchase Agreement dated August 3, 2015.
10.29[e]	Shelf Registration Rights Agreement dated August 3, 2015.
10.30[f]	First Amendment to the Facilities and Support Services Agreement between American DG Energy Inc. and Tecogen Inc., dated August 7, 2015.
10.31[g]	Joint Venture Shareholder Agreement, dated December 28, 2015 between Tecogen, Inc. and Ultra Emissions Technologies Limited.
10.32[g]	License between Tecogen and Ultra Emissions Technologies Ltd., dated December 28, 2015.
10.33[g]	Form of subscription agreement between Tecogen and the several investors purchasing shares of Tecogen common stock and warrants, dated December 28, 2015.
10.34[g]	Form of warrants issued pursuant to the subscription agreements described in Exhibit 10.33 hereto.
10.35[j]	Form of Share Exchange Agreement dated April 11, 2016 and April 13, 2016 between Tecogen and certain shareholders of Ilios.
10.36[j]	Amendment No. 1 to the Senior Convertible Promissory Note effective April 1, 2016.
10.37[k]	Joint Venture Agreement dated May 19, 2016 among Tecogen Inc., Tedom a.s. and Tedom USA, Inc.
10.38[k]	TTcogen LLC Operating Agreement dated as of May 19, 2016.
10.39[l]	First Amendment to Warrant Agreement dated June 27, 2016 described in Exhibit 10.34 hereto.
10.40+[o]	Employment Agreement dated December 1, 2016 between Tecogen Inc. and David A. Garrison.
14.1[a]	Code of Business Conduct and Ethics
21.1*	List of subsidiaries
23.1*	Consent of Wolf & Company, P.C.

Exhibit Number	Description
31.1*	Rule 13a-14(a) Certification of Co-Chief Executive Officer
31.2*	Rule 13a-14(a) Certification of Co-Chief Executive Officer
31.3*	Rule 13a-14(a) Certification of Chief Financial Officer
32.1*	Section 1350 Certifications of Co-Chief Executive Officers and Chief Financial Officer
101.INS*	XBRL Instance Document
101.SCH*	XBRL Taxonomy Extension Schema
101.CAL*	XBRL Taxonomy Extension Calculation Linkbase
101.DEF*	XBRL Taxonomy Extension Definition Linkbase
101.LAB*	XBRL Taxonomy Extension Label Linkbase
101.PRE*	XBRL Taxonomy Extension Presentation Linkbase

* Filed herewith.

\# Confidential Treatment has been granted for portions of this document. The confidential portions were omitted and filed separately, on a confidential basis, with the Securities and Exchange Commission.

\+ Management contract or compensatory plan or agreement.

[a] Incorporated by reference to the registrant’s Registration Statement on Form S-1, as amended, originally filed with the SEC on December 22, 2011 (Registration No. 333-178697).

[b] Incorporated by reference to the registrant's Registration Statement on Form S-1, as amended, filed with the SEC on June 27, 2014 (Registration No. 333-193791).

[d] Incorporated by reference to the registrant’s Quarterly Report on Form 10-Q, for the quarter ended June 30, 2014 as filed with the SEC on August 14, 2014.

[e] Incorporated by reference to the registrant's Current Report on Form 8-K, as filed with the SEC on August 6, 2015.

[f] Incorporated by reference to the registrant's Current Report on Form 8-K, as filed with the SEC on August 13, 2015.

[g] Incorporated by reference to the registrant's Current Report on Form 8-K, as filed with the SEC on December 31, 2015.

[h] Incorporated by reference to the registrant's Current Report on Form 8-K, as filed with the SEC on June 18, 2015.

[i] Incorporated by reference to the registrant's Annual Report on Form 10-K, as filed with the SEC on March 29, 2016.

[j] Incorporated by reference to the registrant's Current Report on Form 8-K, as filed with the SEC on April 15, 2016.

[k] Incorporated by reference to the registrant's Current Report on Form 8-K, as filed with the SEC on May 24, 2016.

[l] Incorporated by reference to the registrant's Current Report on Form 8-K, as filed with the SEC on June 30, 2016.

[m] Incorporated by reference to the registrant's Current Report on Form 8-K, as filed with the SEC on August 8, 2016.

[n] Incorporated by reference to the registrant's Current Report on Form 8-K, as filed with the SEC on November 2, 2016

[o] Incorporated by reference to the registrant's Current Report on Form 8-K, as filed with the SEC on December 2, 2016.

Contents

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of

Tecogen Inc.

We have audited the accompanying consolidated balance sheets of Tecogen Inc. (the "Company") as of December 31, 2016 and 2015, and the related consolidated statements of operations, stockholders' equity, and cash flows for the years then ended. 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. Our audit included consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the consolidated 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 consolidated financial position of Tecogen Inc. as of December 31, 2016 and 2015, and the consolidated results of its operations and its cash flows for the years then ended in conformity with U.S. generally accepted accounting principles.

/s/ WOLF & COMPANY, P.C.

Boston, Massachusetts

March 22, 2017

CONSOLIDATED BALANCE SHEETS
As of December 31, 2016 and 2015

	2016	2015
ASSETS		
Current assets:		
Cash and cash equivalents	$ 3,721,765	$ 5,486,526
Short-term investments, restricted	—	294,802
Accounts receivable, net	8,630,418	5,286,863
Unbilled revenue	2,269,645	1,072,391
Inventory, net	4,774,264	5,683,043
Due from related party	260,988	1,177,261
Deferred financing costs	—	48,989
Prepaid and other current assets	401,876	353,105
Total current assets	20,058,956	19,402,980
Property, plant and equipment, net	517,143	543,754
Intangible assets, net	1,065,967	1,044,611
Goodwill	40,870	40,870
Other assets	2,058,425	58,425
TOTAL ASSETS	$ 23,741,361	$ 21,090,640
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 3,367,481	$ 3,311,809
Accrued expenses	1,378,258	1,066,860
Deferred revenue	876,765	996,941
Total current liabilities	5,622,504	5,375,610
Long-term liabilities:		
Deferred revenue, net of current portion	459,275	273,162
Senior convertible promissory note, related party	3,148,509	3,000,000
Total liabilities	9,230,288	8,648,772
Commitments and contingencies (Note 8)		
Stockholders' equity:		
Tecogen Inc. stockholders' equity:		
Common stock, $0.001 par value; 100,000,000 shares authorized; 19,981,912 and 18,478,990 issued and outstanding at December 31, 2016 and 2015, respectively	19,982	18,479
Additional paid-in capital	37,334,773	34,501,640
Accumulated deficit	(22,843,682)	(21,682,437)
Total Tecogen Inc. stockholders' equity	14,511,073	12,837,682
Noncontrolling interest	—	(395,814)
Total stockholders' equity	14,511,073	12,441,868
TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY	$ 23,741,361	$ 21,090,640

The accompanying notes are an integral part of these consolidated financial statements.

CONSOLIDATED STATEMENTS OF OPERATIONS
For the Years Ended December 31, 2016 and 2015

	2016	2015
Revenues		
Products	$ 10,722,285	$ 10,055,237
Services	13,768,101	11,387,420
Total revenues	24,490,386	21,442,657
Cost of sales		
Products	7,189,225	7,137,149
Services	8,000,483	6,672,282
Total cost of sales	15,189,708	13,809,431
Gross profit	9,300,678	7,633,226
Operating expenses		
General and administrative	7,994,361	7,997,512
Selling	1,636,704	1,687,479
Research and development	667,064	591,585
Total operating expenses	10,298,129	10,276,576
Loss from operations	(997,451)	(2,643,350)
Other income (expense)		
Interest and other income	11,988	14,334
Interest expense	(175,782)	(171,944)
Total other expense, net	(163,794)	(157,610)
Loss before income taxes	(1,161,245)	(2,800,960)
Consolidated net loss	(1,161,245)	(2,800,960)
Less: Loss attributable to the noncontrolling interest	64,962	73,547
Net loss attributable to Tecogen Inc.	$ (1,096,283)	$ (2,727,413)
Net loss per share - basic and diluted	$ (0.06)	$ (0.16)
Weighted average shares outstanding - basic and diluted	19,295,922	16,860,453

The accompanying notes are an integral part of these consolidated financial statements.

CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY

For the Years Ended December 31, 2016 and 2015

	Tecogen Inc.					
	Common Stock Shares	Common Stock $.001 Par Value	Additional Paid-In Capital	Accumulated Deficit	Noncontrolling Interest	Total
Balance at December 31, 2014	15,905,881	$ 15,906	$ 25,088,214	$ (18,955,024)	$ (325,760)	$ 5,823,336
Sale of common stock and warrants	2,350,734	2,351	8,857,416	—	—	8,859,767
Exercise of stock options	222,375	222	360,003	—	—	360,225
Stock based compensation expense	—	—	196,007	—	3,493	199,500
Net loss	—	—	—	(2,727,413)	(73,547)	(2,800,960)
Balance at December 31, 2015	18,478,990	$ 18,479	$ 34,501,640	$ (21,682,437)	$ (395,814)	$ 12,441,868
Exercise of warrants	675,000	675	2,699,325	—	—	2,700,000
Exercise of stock options	157,458	158	395,414	—	—	395,572
Acquisition of non-controlling interest in Ilios	670,464	670	(427,537)	(64,962)	460,776	(31,053)
Stock-based compensation expense	—	—	165,931	—	—	165,931
Net loss	—	—	—	(1,096,283)	(64,962)	(1,161,245)
Balance at December 31, 2016	19,981,912	$ 19,982	$ 37,334,773	$ (22,843,682)	$ —	$ 14,511,073

The accompanying notes are an integral part of these consolidated financial statements.

CONSOLIDATED STATEMENTS OF CASH FLOWS
For the Years Ended December 31, 2016 and 2015

	2016	2015
CASH FLOWS FROM OPERATING ACTIVITIES:		
Net loss	$ (1,161,245)	$ (2,800,960)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	264,005	271,727
Loss (gain) on disposal of asset	640	(4,631)
Provision for losses on accounts receivable	(19,245)	—
(Recovery) for inventory reserve	(27,000)	(7,000)
Stock-based compensation	165,931	199,500
Non-cash interest expense	49,532	50,202
Changes in operating assets (increase) decrease in:		
Short-term investments, restricted	294,802	290,900
Accounts receivable	(3,324,310)	(536,426)
Inventory	935,779	(1,585,822)
Unbilled revenue	(1,197,254)	(375,479)
Due from related party	916,273	(577,010)
Prepaid expenses and other current assets	(48,771)	(4,237)
Other assets	—	(5,100)
Changes in operating liabilities increase (decrease) in:		
Accounts payable	55,672	895,496
Accrued expenses	311,398	58,707
Deferred revenue	65,937	(603,626)
Net cash used in operating activities	(2,717,856)	(4,733,759)
CASH FLOWS FROM INVESTING ACTIVITIES:		
Purchases of property and equipment	(139,725)	(69,582)
Disposal of property and equipment	—	16,874
Purchases of intangible assets	(119,665)	(133,032)
Investment in Ultra Emissions Technologies, Ltd.	(2,000,000)	—
Net cash used in investing activities	(2,259,390)	(185,740)
CASH FLOWS FROM FINANCING ACTIVITIES:		
Payments for debt issuance costs	(2,034)	—
Proceeds on notes payable	150,000	—
Payments for share issuance	(31,053)	—
Proceeds from sale of common stock, net of costs	—	8,859,767
Proceeds from exercise of stock options	395,572	360,225
Proceeds from exercise of warrants	2,700,000	—
Net cash provided by financing activities	3,212,485	9,219,992
Net increase (decrease) in cash and cash equivalents	(1,764,761)	4,300,493
Cash and cash equivalents, beginning of the year	5,486,526	1,186,033
Cash and cash equivalents, end of the year	$ 3,721,765	$ 5,486,526

Supplemental disclosure of cash flow information:

Cash paid for interest	$ 126,250	$ 121,742
Stock exchange for non-controlling interest in Ilios	330,852	—

The accompanying notes are an integral part of these consolidated financial statements.

Note 1 – Nature of business and operations

Tecogen Inc. (the "Company"), a Delaware Corporation, was organized on November 15, 2000, and acquired the assets and liabilities of the Tecogen Products division of Thermo Power Corporation. The Company produces commercial and industrial, natural-gas-fueled engine-driven, combined heat and power (CHP) products that reduce energy costs, decrease greenhouse gas emissions and alleviate congestion on the national power grid. Tecogen's products supply electric power or mechanical power for cooling, while heat from the engine is recovered and purposefully used at a facility. The majority of the Company's customers are located in regions with the highest utility rates, typically California, the Midwest and the Northeast.

On May 4, 2009, the Company invested in a new corporation called Ilios Inc., or Ilios. The investment gave the Company a controlling financial interest in Ilios, whose business focus is advanced heating systems for commercial and industrial applications. Beginning in April 2016, a series of private placements were completed resulting in Ilios merging into the Company and Ilios is consolidated into our financial statements.

The Company's operations are comprised of one business segment. Our business is to manufacture and support highly efficient CHP products based on engines fueled by natural gas.

Proposed Acquisition of American DG Energy, Inc.

On November 1, 2016, Tecogen and Tecogen.ADGE Acquisition Corp., a Delaware corporation and wholly-owned subsidiary of Tecogen ("Merger Sub") formed for the purpose of effecting the merger, entered into an Agreement and Plan of Merger (the "Merger Agreement") with American DG Energy, Inc., a Delaware corporation ("ADGE"). Pursuant to the Merger Agreement, the Merger Sub will be merged with and into ADGE (the "Merger"), with ADGE continuing as the surviving company in the Merger. Following the Merger, ADGE will become a wholly-owned subsidiary of Tecogen. The Merger Agreement sets forth the terms and conditions of the proposed acquisition of ADGE.

Subject to the terms and conditions set forth in the Merger Agreement, at the effective time of the Merger, each of ADGE's shares of common stock, $.001 par value per share, issued and outstanding immediately prior to the effective time of the Merger will be converted into the right to receive .092 shares of common stock, $.001 par value per share, of Tecogen (the "Exchange Ratio"). The number of shares of Tecogen may be subject to adjustment in the event of any stock split, reverse stock split, stock dividend, recapitalization, reclassification, combination, exchange of shares or other similar event with respect to the number of ADGE's or Tecogen's shares outstanding after the date of the Merger Agreement and prior to the effective time of the Merger. Options to acquire ADGE shares of common stock and restricted stock awards with respect to ADGE shares of common stock granted before the effective time of the Merger will remain in effect until they expire or are terminated and shall be exercisable for or relate to a number of shares of common stock of Tecogen equal to the Exchange Ratio, as adjusted.

Note 2 – Summary of significant accounting policies

Principles of Consolidation and Basis of Presentation

The financial statements have been prepared in accordance with accounting standards set by the Financial Accounting Standards Board, or FASB. The FASB sets generally accepted accounting principles, or GAAP, to ensure financial condition, results of operations, and cash flows are consistently reported. References to GAAP issued by the FASB in these footnotes are to the FASB Accounting Standards Codification, or ASC. The Company adopted the presentation requirements for noncontrolling interests required by ASC 810 *Consolidation*. Under ASC 810, earnings or losses attributed to the noncontrolling interests are reported as part of the consolidated earnings and not a separate component of income or expense. Noncontrolling interests in the net assets and operations of Ilios are reflected in the caption "Noncontrolling interest" in the accompanying consolidated financial statements. All intercompany transactions have been eliminated. In May 2016, the Company completed an exchange of common stock with the shareholders of Ilios and effected a statutory merger. Ilios is no longer a subsidiary.

Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Concentration of Credit Risk

The Company’s financial instruments that are exposed to concentrations of credit risk consist primarily of cash and cash equivalents, short-term investments and accounts receivable. The Company maintains its cash balances in bank accounts, which at times may exceed the Federal Deposit Insurance Corporation’s general deposit insurance limits. The amount on deposit at December 31, 2016 and 2015 which exceeded the $250,000 federally insured limit were approximately $3,471,765 and $5,329,528, respectively. The Company has not experienced any losses in such accounts and thus believes that it is not exposed to any significant credit risk on cash.

There was no customer who represented more than 10% of revenues for either of the years ended December 31, 2016 and 2015. The Company has approximately three hundred ninety-six customers who represented 100% of the revenues for the year ended December 31, 2016. Included in trade accounts receivable are amounts from one customer who represents 15% of the accounts receivable balance as of December 31, 2016, and another customer who represented 16% of the accounts receivable balance as of December 31, 2015.

Cash and Cash Equivalents

The Company considers all highly liquid instruments with an original maturity date, at date of purchase, of three months or less to be cash and cash equivalents.

Short-Term Investments

Short-term investments consist of certificate of deposit with maturities of greater than three months but less than one year. Certificates of deposits approximate fair value, based on estimates using current market rates offered for deposits with similar remaining maturities. These certificates of deposits were restricted as collateral for performance bonds associated with ongoing turnkey projects. On January 28, 2016, the collateral restriction was lifted, and the remaining certificate was liquidated into cash.

Accounts Receivable

Accounts receivable are stated at the amount management expects to collect from outstanding balances. An allowance for doubtful accounts is provided for those accounts receivable considered to be uncollectible based upon historical experience and management’s evaluation of outstanding accounts receivable at the end of the year. Bad debts are written off against the allowance when identified. At December 31, 2016 and 2015, the allowance for doubtful accounts was $29,665 and $50,000, respectively.

Inventory

Raw materials, work in process, and finished goods inventories are stated at the lower of cost, as determined by the average cost method, or market. The Company periodically reviews inventory quantities on hand for excess and/or obsolete inventory based primarily on historical usage, as well as based on estimated forecast of product demand. Any reserves that result from this review are charged to cost of sales.

Property, Plant and Equipment

Property, plant and equipment are recorded at cost. Depreciation is provided using the straight-line method over the estimated useful life of the asset, which range from three to fifteen years. Leasehold improvements are amortized using the straight-line method over the lesser of the estimated useful lives of the assets or the term of the related leases. Expenditures for maintenance and repairs are expensed currently, while renewals and betterments that materially extend the life of an asset are capitalized.

Intangible Assets

Intangible assets subject to amortization include costs incurred by the Company to acquire product certifications, certain patent costs and developed technologies. These costs are amortized on a straight-line basis over the estimated economic life of the intangible asset. Indefinite life intangible assets such as trademarks are recorded at cost and not amortized. The Company reviews intangible assets for impairment when the circumstances warrant.

Goodwill

The Company's goodwill was recorded as a result of the Company's asset acquisition of the permanent magnet generator technology in 2013. The Company tests its recorded goodwill for impairment as of the last day of the year, or more often if indicators of potential impairment exist, by determining if the carrying value of the Company's single reporting unit exceeds its estimated fair value. Factors that could trigger an interim impairment test include, but are not limited to, underperformance relative to historical or projected future operating results, significant changes in the manner of use of the acquired assets or the Company's overall business, significant negative industry or economic trends and a sustained period where market capitalization, plus an appropriate control premium, is less than stockholders' equity.

The Company's impairment testing involves a step zero process. Step zero allows for management to first assess qualitative factors to determine whether it is more likely than not that the fair value of the intangible asset is less than its carrying value. Therefore, as of December 31, 2016, the Company determined that the fair value of the reporting unit exceeded its carrying value and therefore no impairment was recognized.

Impairment of Long-lived Assets

Long-lived assets, including intangible assets and property, plant and equipment, are evaluated for impairment whenever events or changes in circumstances have indicated that an asset may not be recoverable and are grouped with other assets to the lowest level for which identifiable cash flows are largely independent of the cash flows of other groups of assets and liabilities. If the sum of the projected undiscounted cash flows (excluding interest charges) is less than the carrying value of the assets, the assets will be written down to the estimated fair value and such loss is recognized in income from continuing operations in the period in which the determination is made. Management determined that no impairment of long-lived assets existed as of December 31, 2016.

Off Balance Sheet Arrangements

On July 22, 2013, John Hatsopoulos, one of the Company’s Co-Chief Executive Officers, personally pledged to support a bank credit facility of $1,055,000 to support bank guarantees issued on certain construction contracts. On April 10, 2015, the performance obligation tied to this bond was relieved and the credit facility was canceled.

As of December 31, 2015, $294,802 in a letter of credit was outstanding under a revolving bank credit facility needed to collateralize a performance bond on a certain installation project. The bank required collateral to issue the letter of credit which the company provided in the form of restricted cash. This revolving bank credit facility was terminated on January 28, 2016 as the performance bond obligations were cleared.

On June 15, 2015, the Company entered into a Non-Revolving Line of Credit Agreement, or the Agreement, with John N. Hatsopoulos, the Company's Co-Chief Executive Officer and a Company Director. Under the terms of the Agreement, Mr. Hatsopoulos has agreed to lend the Company up to an aggregate of $2,000,000, with a withdrawal limit of $250,000 per financial calendar quarter, at the written request of the Company. See Note 7 for details of the agreement.

Loss per Common Share

The Company computes basic loss per share by dividing net loss for the period by the weighted-average number of shares of common stock outstanding during the period. The Company computes its diluted earnings per common share using the treasury stock method. For purposes of calculating diluted earnings per share, the Company considers its shares issuable in connection with the convertible debentures, stock options and warrants to be dilutive common stock equivalents when the exercise/conversion price is less than the average market price of our common stock for the period. All shares issuable for the years ended December 31, 2016 and 2015 were anti-dilutive because of the reported net loss.

Segment Information

The Company reports segment data based on the management approach. The management approach designates the internal reporting that is used by management for making operating and investment decisions and evaluating performance as the source of the Company's reportable segments. The Company uses one measurement of profitability and does not disaggregate its business for internal reporting. The Company has determined that it operates in one business segment which manufactures and supports highly efficient CHP products based on engines fueled by natural gas. All of the Company’s long lived assets reside in, and the significant majority of the Company’s revenue is generated in the United States of America.

The following table summarizes net revenue by product line and services for the years ended December 31, 2016 and 2015:

	2016	2015
Products:		
Cogeneration	$ 7,794,575	$ 7,882,838
Chiller & Heat Pump	2,927,710	2,172,399
Total Product Revenue	10,722,285	10,055,237
Services:		
Service contracts and related part sales	8,541,047	7,832,181
Installations	5,227,054	3,555,239
Total Service Revenue	13,768,101	11,387,420
Total Revenue	$ 24,490,386	$ 21,442,657

Income Taxes

The Company uses the asset and liability method of accounting for income taxes. The current or deferred tax consequences of transactions are measured by applying the provisions of enacted tax laws to determine the amount of taxes payable currently or in future years. Deferred tax assets and liabilities are determined based on the difference between the financial statement and tax bases of assets and liabilities and expected future tax consequences of events that have been included in the financial statements or tax returns using enacted tax rates in effect for the years in which the differences are expected to reverse. Under this method, a valuation allowance is used to offset deferred taxes if, based upon the available evidence, it is more likely than not that some or all of the deferred tax assets may not be realized. Management evaluates the recoverability of deferred taxes and the adequacy of the valuation allowance annually.

The Company has adopted the provisions of the accounting standards relative to accounting for uncertainties in tax positions. These provisions provide guidance on the recognition, de-recognition and measurement of potential tax benefits associated with tax positions. The Company elected to recognize interest and penalties related to income tax matters as a component of income tax expense in the statements of operations. The Company has analyzed its current tax return compliance positions and has determined that no uncertain tax positions have been taken that would require recognition.

With few exceptions, the Company is no longer subject to possible income tax examinations by federal, state or local taxing authorities for tax years before 2013, with the exception of loss carryforwards in the event they are utilized in future years. The Company's tax returns are open to adjustment from 2002 forward, as a result of the fact that the Company has loss carryforwards from those years, which may be adjusted in the year those losses are utilized.

Fair Value of Financial Instruments

The Company’s financial instruments are cash and cash equivalents, certificates of deposit, accounts receivable, accounts payable, demand notes, line of credit and convertible debentures due to related parties. The recorded values of cash and cash equivalents, accounts receivable and accounts payable approximate their fair values based on their short-term nature. At December 31, 2016, the recorded value on the consolidated balance sheet of the debentures approximates fair value as the terms approximate those available for similar instruments. Certificates of deposits are classified as short-term investments and approximate fair value, based on estimates using current market rates offered for deposits with similar remaining maturities.

Revenue Recognition

Revenue is recognized when persuasive evidence of an arrangement exists, delivery has occurred or services have been rendered, the price is fixed or determinable and collectability is reasonably assured. Generally, sales of cogeneration and chiller units and parts are recognized when shipped and services are recognized over the term of the service period. Payments received in advance of services being performed are recorded as deferred revenue.

The Company recognizes revenue in certain circumstances before delivery has occurred (commonly referred to as bill and hold transactions). In such circumstances, among other things, risk of ownership has passed to the buyer, the buyer has made a written fixed commitment to purchase the finished goods, the buyer has requested the finished goods be held for future delivery as scheduled and designated by them, and no additional performance obligations exist by the Company. For these transactions, the finished goods are segregated from inventory and normal billing and credit terms granted. For the year ended December 31, 2016, bill and hold transactions were approximately $2,588,458 in revenue compared to $928,900 in 2015.

For those arrangements that include multiple deliverables, the Company first determines whether each service or deliverable meets the separation criteria of FASB ASC 605-25, *Revenue Recognition—Multiple-Element Arrangements*. In general, a deliverable (or a group of deliverables) meets the separation criteria if the deliverable has stand-alone value to the customer and, if the arrangement includes a general right of return, delivery or performance of the undelivered item(s) is considered probable and substantially in control of the Company. Each deliverable that meets the separation criteria is considered a separate "unit of accounting". The Company allocates the total arrangement consideration to each unit of accounting using the relative selling price method. The amount of arrangement consideration that is allocated to a delivered unit of accounting is limited to the amount that is not contingent upon the delivery of another unit of accounting.

When vendor-specific objective evidence or third-party evidence is not available, adopting the relative fair value method of allocation permits the Company to recognize revenue on specific elements as completed based on the estimated selling price. The Company generally uses internal pricing lists that determine sales prices to external customers in determining its best estimate of the selling price of the various deliverables in multiple-element arrangements. Changes in judgments made in estimating the selling price of the various deliverables could significantly affect the timing or amount of revenue recognition. The Company enters into sales arrangements with customers to sell its cogeneration and chiller units and related service contracts and occasionally installation services. Based on the fact that the Company sells each deliverable to other customers on a stand-alone basis, the company has determined that each deliverable has a stand-alone value. Additionally, there are no rights of return relative to the delivered items; therefore, each deliverable is considered a separate unit of accounting.

After the arrangement consideration has been allocated to each unit of accounting, the Company applies the appropriate revenue recognition method for each unit of accounting based on the nature of the arrangement and the services included in each unit of accounting. Cogeneration and chiller units are recognized when shipped and services are recognized over the term of the applicable agreement, or as provided when on a time and materials basis.

In some cases, our customers may choose to have the Company engineer and install the system for them rather than simply purchase the cogeneration and/or chiller units. In this case, the Company accounts for revenue, or turnkey revenue, and costs using the percentage-of-completion method of accounting. Under the percentage-of-completion method of accounting, revenues are recognized by applying percentages of completion to the total estimated revenues for the respective contracts. Costs are recognized as incurred. The percentages of completion are determined by relating the actual cost of work performed to date to the current estimated total cost at completion of the respective contracts. When the estimate on a contract indicates a loss, the Company's policy is to record the entire expected loss, as required by generally accepted accounting principles. The excess of contract costs and profit recognized to date on the percentage-of-completion accounting method in excess of billings is recorded as unbilled revenue. Billings in excess of related costs and estimated earnings are recorded as deferred revenue.

Presentation of Sales Taxes

The Company reports revenues net of any revenue-based taxes assessed by governmental authorities that are imposed on and concurrent with specific revenue-producing transactions.

Shipping and Handling Costs

The Company classifies freight billed to customers as sales revenue and the related freight costs as cost of sales.

Advertising Costs

The Company expenses the costs of advertising as incurred. For the years ended December 31, 2016 and 2015, advertising expense was approximately $134,000 and $184,000, respectively.

Research and Development Costs

Research and development expenditures are expensed as incurred. The Company's total research and development expenditures of approximately $667,064 and $591,585 for each of the years ended December 31, 2016 and 2015, respectively.

Stock-Based Compensation

Stock-based compensation cost is measured at the grant date, based on the estimated fair value of the award, and is recognized as an expense in the statements of operations over the requisite service period.

The determination of the fair value of share-based payment awards is affected by the Company's stock price. For the awards prior to the Company being publicly traded, the Company considered the sales price of the Common Stock in private placements to unrelated third parties as a measure of the fair value of its Common Stock.

The Company utilizes an estimated forfeiture rate when calculating the expense for the period. Forfeitures are estimated at the time of grant and revised, if necessary, in subsequent periods if actual forfeitures differ from those estimates. Stock-based compensation expense recognized is based on awards that are ultimately expected to vest. The Company evaluates the assumptions used to value awards regularly and if factors change and different assumptions are employed, stock-based compensation expense may differ significantly from what has been recorded in the past. If there are any modifications or cancellations of the underlying unvested securities, the Company may be required to accelerate, increase or cancel any remaining unearned stock-based compensation expense.

Pursuant to ASC 505-50, *Equity Based Payments to Non-Employees*, the fair value of restricted Common Stock and stock options issued to nonemployees is revalued at each reporting period until the ultimate measurement date, as defined by ASC 505-50. The Company records the value of the instruments at the time services are provided and the instruments vest. Accordingly, the ultimate expense is not fixed until such instruments are fully vested.

Recent Accounting Pronouncements

In May 2014, the FASB amended its standards related to revenue recognition. This amendment replaces all existing revenue recognition guidance and provides a single, comprehensive revenue recognition model for all contracts with customers. The standard contains principles that we will apply to determine the measurement of revenue and timing of when it is recognized. The underlying principle is that we will recognize revenue in a manner that depicts the transfer of goods or services to customers at an amount that we expect to be entitled to in exchange for those goods or services. The guidance provides a five-step analysis of transactions to determine when and how revenue is recognized. Other major provisions include capitalization of certain contract costs, consideration of the time value of money in the transaction price and allowing estimates of variable consideration to be recognized before contingencies are resolved in certain circumstances. The amendment also requires additional disclosure about the nature, amount, timing and uncertainty of revenue and cash flows arising from customer contracts, including significant judgments and changes in judgments and assets recognized from costs incurred to fulfill a contract. The standard allows either full or modified retrospective adoption effective for annual and interim periods beginning January 1, 2018. Management is in the process of evaluating the impact the amendment will have on our Consolidated Financial Statements. While a final decision has not been made, we are currently planning to adopt the standard using the modified retrospective approach.

In April 2015, the FASB amended its standards related to the balance sheet classification of debt issuance costs. This amendment requires entities to present debt issuance costs related to a debt liability as a direct deduction from the carrying amount of the debt and requires retrospective application. The new rules will become effective for annual and interim periods beginning after December 15, 2016. This will not have a significant impact on our Consolidated Financial Statements.

In July 2015, the FASB issued ASU No. 2015-11, which simplifies the subsequent measurement of inventory by requiring inventory to be measured at the lower of cost and net realizable value. Net realizable value is the estimated selling prices in the ordinary course of business, less reasonably predictable costs of completion, disposal, and transportation. This ASU is effective for public business entities for fiscal years beginning after December 15, 2016, and interim periods within those fiscal years. This will not have a significant impact on our Consolidated Financial Statements.

In November 2015, the FASB amended its standards related to balance sheet classification of deferred taxes. This amendment requires that all deferred tax assets and liabilities be classified as non-current in a classified statement of financial position. The new rules will become effective for annual and interim periods beginning after December 15, 2016. Our deferred tax assets and liabilities include a full evaluation allowance. The Company's adoption is not expected to impact our Consolidated Financial Statements.

In February 2016, the FASB issued ASU No. 2016-02, Leases (Topic 842), which requires companies to recognize all leases as assets and liabilities on the consolidated balance sheet. This ASU retains a distinction between finance leases and operating leases, and the classification criteria for distinguishing between finance leases and operating leases are substantially similar to the classification criteria for distinguishing between capital leases and operating leases in the current accounting literature. The result of retaining a distinction between finance leases and operating leases is that under the lessee accounting model in Topic 842, the effect of leases in a consolidated statement of comprehensive income and a consolidated statement of cash flows is largely unchanged from previous GAAP. The amendments in this ASU are effective for fiscal years beginning after December 15, 2018, including interim periods within those fiscal years. Earlier application is permitted. The Company is currently evaluating the impact that the adoption of this ASU will have on its Consolidated Financial Statements.

Note 3 – Loss per common share:

Basic and diluted loss per share for the years ended December 31, 2016 and 2015, respectively, was as follows:

	2016	2015
Loss available to stockholders	$ (1,096,283)	$ (2,727,413)
Weighted average shares outstanding - Basic and diluted	19,295,922	16,860,453
Basic and diluted loss per share	$ (0.06)	$ (0.16)
Anti-dilutive shares underlying stock options outstanding	1,117,918	1,356,325
Anti-dilutive convertible debentures	889,831	890,207

Note 4 – Inventory

Inventories at December 31, 2016 and 2015 consisted of the following.

	2016	2015
Gross raw materials	$ 4,658,872	$ 5,618,853
Less - reserves	(266,000)	(293,000)
Net raw materials	4,392,872	5,325,853
Work-in-process	144,528	124,845
Finished goods	236,864	232,345
	$ 4,774,264	$ 5,683,043

Note 5 – Intangible assets other than goodwill

The Company capitalized $30,035 and $39,272 of product certification costs during the years ended December 31, 2016 and 2015, respectively. Also included in intangible assets are the costs incurred by the Company to acquire certain patents. These patents, once in service, will be amortized on a straight-line basis over the estimated economic life of the associated product, which range from approximately 7-10 years. The Company capitalized $77,240 and $88,985 of patent-related costs during the years ended December 31, 2016 and 2015, respectively. The Company capitalized $12,390 and $4,775 in trademarks during the years ended December 31, 2016 and 2015, respectively.

Intangible assets at December 31, 2016 and 2015 consist of the following:

	Product Certifications	Patents	Developed Technology	Trademarks	Total
Balance at December 31, 2016					
Intangible assets	$ 544,651	$ 681,155	$ 240,000	$ 17,165	$ 1,482,971
Less - accumulated amortization	(233,992)	(123,012)	(60,000)	—	(417,004)
	$ 310,659	$ 558,143	$ 180,000	$ 17,165	$ 1,065,967
Balance at December 31, 2015					
Intangible assets	$ 514,616	$ 603,915	240,000	4,775	$ 1,363,306
Less - accumulated amortization	(182,931)	(91,764)	(44,000)	—	(318,695)
	$ 331,685	$ 512,151	$ 196,000	$ 4,775	$ 1,044,611

Amortization expense was $98,310 and $99,721 during the years ended December 31, 2016 and 2015, respectively. Estimated amortization expense at December 31, 2016 for each of the five succeeding years and thereafter are as follows:

2017	$ 167,316
2018	161,118
2019	142,725
2020	131,367
2021	119,987
Thereafter	343,454
	$ 1,065,967

Note 6 – Property, plant and equipment

Property, plant and equipment at December 31, 2016 and 2015 consisted of the following:

	Estimated Useful Life (in Years)	2016	2015
Machinery and equipment	5 - 7 years	$ 1,009,893	$ 953,081
Furniture and fixtures	5 years	141,874	113,842
Computer software	3 - 5 years	102,415	67,215
Leasehold improvements	*	437,341	437,341
		1,691,523	1,571,479
Less - accumulated depreciation and amortization		(1,174,380)	(1,027,725)
Net property, plant and equipment		$ 517,143	$ 543,754

* Lesser of estimated useful life of asset or lease term

Depreciation and amortization expense on property and equipment for the years ended December 31, 2016 and 2015 was $165,695 and $172,006, respectively.

Note 7 – Demand notes payable, convertible debentures and line of credit

On December 23, 2013, the Company entered into a Senior Convertible Promissory Note (the "Note") with Michaelson Capital Special Finance Fund LP, ("Michaelson"), for the principal amount of $3,000,000 with interest at 4% per annum for a term of three years. On April 1, 2016, the Company amended the Note increasing the total principal amount to $3,150,000 increasing the conversion price to $3.54 from $3.37, and extending the term until December 23, 2018. In the event of default such interest rate shall accrue at 8% after the occurrence of the event of default and during continuance plus 2% after the occurrence and during the continuance of any other event of default. The amended Note is a senior secured obligation which pays interest only on a monthly basis in arrears at a rate of 4% per annum, unless earlier converted in accordance with the terms of the agreement prior to such date. The Note is secured by an all asset lien and is senior in right of payment to any unsecured indebtedness that is expressly subordinated in right of payment to the Note.

The principal balance of the Note, together with any unpaid interest, is convertible into shares of the Company's common stock at 282.49 shares of our common stock per $1,000 principal amount of Note (equivalent to a conversion price of $3.54 per share) at the option of Michaelson. If at any time the common stock of the Company is (1) the arithmetic average of the volume weighted average price of the Common Stock for the twenty consecutive trading days preceding the Company's notice of mandatory conversion exceeds $150,000, the Company shall have the right to require conversion of all of the then outstanding principal balance together with unpaid interest of this Note into the Company's common stock based on the conversion price of $3.54 per share. The conversion price is subject to adjustment.

The Company may prepay all of the outstanding principal and interest due and payable under this Note in full, at any time prior to the maturity date for an amount equal to 120% of the then outstanding principal and interest due and payable as of the date of such prepayment.

Upon change of control, as defined by the Note, at Michaelson's option, the obligations may be assumed, on the terms and conditions in this Note, through an assignment and assumption agreement, or the Company may prepay all of the then outstanding principal and unpaid interest under this Note in full at the optional 120% prepayment amount. This provision does not create an embedded derivative in accordance with ASC 815, *Derivatives and Hedging.* As such it is not required to be bifurcated and accounted for separately from the Note.

Debt issuance costs of $152,135 with a balance of $1,491 at December 31, 2016 are being amortized to interest expense over the term of the Note using the effective interest method. At December 31, 2016, there were 889,831 shares of common stock issuable upon conversion of the Notes.

Prior to this transaction, Michaelson was an unrelated party. Due to its beneficial ownership percentage of 5.7% after this transaction, Michaelson is now considered a related party.

On June 15, 2015, the Company entered into a Non-Revolving Line of Credit Agreement, or the Agreement, with John N. Hatsopoulos, the Company's Co-Chief Executive Officer and a Company Director. Under the terms of the Agreement, Mr. Hatsopoulos has agreed to lend the Company up to an aggregate of $2,000,000, with a withdrawal limit of $250,000 per financial calendar quarter, at the written request of the Company. Any amounts borrowed by the Company pursuant to the Agreement will bear interest at 6% per year. Interest is due and payable quarterly in arrears. The term of the Agreement is from July 1, 2015 to July 1, 2017. Repayment of the principal amount borrowed pursuant to the Agreement will be due on July 1, 2017, or the Maturity Date. Prepayment of any amounts due under the Agreement may be made at any time without penalty. The Agreement terminates on the Maturity Date. The Company has not yet borrowed any amounts pursuant to the Agreement.

Note 8 – Commitments and contingencies

Operating Lease Obligations

The Company leases office space and warehouse facilities under various lease agreements which expire through March 2024. The Company subleases portions of its corporate offices and manufacturing facility to sub-tenants under annual sublease agreements, on a calendar year basis. Total rent expense for the years ended December 31, 2016 and 2015 amounted to $691,769 and $637,588, offset by $63,842 and $113,472 in rent paid by sub-lessees, to both related and unrelated parties, for a net amount of $627,927 and $524,116, respectively.

As of December 31, 2016, the future minimum lease payments receivable on subleases were $31,353.

The Company leased two passenger vehicle under a lease agreement expiring in 2018. Vehicle rent expense amounted to $6,918 and 7,547 during the year ended December 31, 2016 and 2015, respectively.

Future minimum lease payments under all non-cancelable operating leases as of December 31, 2016 consist of the following:

Years Ending December 31,	Amount
2017	$ 599,058
2018	561,070
2019	506,432
2020	513,743
2021	521,375
2022 and thereafter	1,200,668
Total	$ 3,902,346

Letters of Credit

As of December 31, 2015, $294,802 in a letter of credit was outstanding under a revolving bank credit facility needed to collateralize a performance bond on a certain installation project. The bank required collateral to issue the letter of credit which the company provided in the form of restricted cash. This revolving bank credit facility was terminated on January 28, 2016 as the performance bond obligations were cleared. On April 10, 2015, the performance obligation tied to a performance bond previously collateralized by an account owned by John N. Hatsopoulos was relieved and the credit facility was canceled.

Legal Proceedings

Tecogen is not currently a party to any material litigation arising from its operations, and it is not aware of any pending or threatened litigation against it from its operations that could have a material adverse effect on its business, operating results of financial condition. However, it is a party to a claim in the Superior Court of the Commonwealth of Massachusetts and named as a defendant in a case in the United States District Court for the District of Massachusetts, described below, related to the Merger.

Massachusetts Superior Court Action

On or about February 6, 2017, ADGE, John Hatsopoulos, George N. Hatsopoulos, Charles T. Maxwell, Deanna M. Petersen, Christine Klaskin, John Rowe, Joan Giacinti, Elias Samaras, Tecogen, and Merger Sub were served with a Verified Complaint by William C. May, individually and on behalf of the other shareholders of ADGE as a class. The complaint alleges the proposed Merger is subject to certain conflicts of interest; that ADGE's board failed to protect its shareholders by failing to conduct an auction or market check; that the Exchange Ratio undervalues ADGE's outstanding shares; that ADGE's directors breached their fiduciary duties in approving the Merger proposal; that the registration statement on Form S-4 contained material omissions; that Tecogen aided and abetted ADGE's board's breaches of its fiduciary duties; and other claims. The plaintiff is seeking preliminary and permanent injunctions related to the Merger, rescissory damages, compensatory damages, accounting, and other relief.

United States District Court Action

On or about February 15, 2017, a lawsuit was filed in the United States District Court for the District of Massachusetts by Lee Vardakas ("Vardakas"), individually and on behalf of other stockholders of ADGE, naming ADGE, John N. Hatsopoulos, George N. Hatsopoulos, Benjamin Locke, Charles T. Maxwell, Deanne M. Petersen, Christine M. Klaskin, John Rowe, Joan Giacinti, Elias Samaras, Tecogen Inc., Tecogen.ADGE Acquisition Corp., and Cassel Salpeter and Co., LLC, as defendants. In the complaint related to the matter, Vardakas claims: that the defendants violated Section 14(a)(1) of the Securities Exchange Act of 1934, as amended ("Exchange Act"), and Rule 14a-9 thereunder, in that the Form S-4 registration statement, as amended, filed by Tecogen contained certain material misstatements or omissions related to the valuation analysis in support of the fairness opinion, certain financial projections, and information related to certain conflicts of interest; that the directors and officers of ADGE have control person liability for the alleged material misstatements and omissions pursuant to Section 20(a) of the Exchange Act; that the directors of ADGE breached their fiduciary duties to ADGE's stockholders related to the merger transactions, including that they failed to take steps to obtain the highest possible consideration for ADGE stockholders in the transaction; that Mr. John Hatsopoulos and Mr. George Hatsopoulos, acting in concert and as a group, as controlling stockholders of ADGE, violated their fiduciary duties to the stockholders of ADGE; and that Mr. George Hatsopoulos, Tecogen,ADGE Acquisition Corp., Cassel Salpeter aided and abetted breaches of fiduciary duties by the directors and officers of ADGE. Vardakas is seeking a preliminary injunction, damages, costs and disbursements, including reasonable attorneys' fees, and such other relief as the court deems just and proper. As of the date of this report, none of the persons named as defendants in this action have been served with the complaint in the matter.

At this time the Company believes these cases are not material to its financial statements

Note 9 – Product warranty

The Company reserves an estimate of its exposure to warranty claims based on both current and historical product sales data and warranty costs incurred. The majority of the Company's products carry a one-year warranty. The Company assesses the adequacy of its recorded warranty liability annually and adjusts the amount as necessary. The warranty liability is included in accrued expenses on the accompanying consolidated balance sheets.

Changes in the Company's warranty reserve were as follows:

Warranty reserve, December 31, 2014	$ 147,000
Warranty provision for units sold	87,690
Costs of warranty incurred	(124,690)
Warranty reserve, December 31, 2015	110,000
Warranty provision for units sold	169,180
Costs of warranty incurred	(131,180)
Warranty reserve, December 31, 2016	$ 148,000

Note 10 – Stockholders' equity

Common Stock

In 2015, the Company raised additional funds through the private placement of common stock. In connection with these placements, the Company sold an aggregate of 2,350,734 shares of common stock in a purchase price range from $3.37 and $4.75 per share, resulting in net cash proceeds of $8,859,767.

Beginning on April 11, 2016 through its conclusion on May 3, 2016, the Company entered into numerous private placement share exchange agreements ("Share Exchange Agreements") with shareholders of Ilios ("Exchanging Shareholders"), a majority owned subsidiary of the Company. Pursuant to the Share Exchange Agreements, the Exchanging Shareholders agreed to exchange every 7.86 of their restricted Ilios shares of common stock for 1 share of the Company's restricted common stock. In addition, the Company granted each Exchanging Shareholder registration rights of the Company's common stock they received in exchange for their Ilios shares. The Company issued a total of 670,464 shares of its common stock in exchange for Ilios shares of common stock. Pursuant to the Registration Rights Agreement, the Company filed a registration statement covering the resale of the shares.

Upon execution of the exchange agreements for 100% of the shares of Ilios, the Company no longer had a non-controlling interest in its subsidiary. On April 30, 2016, Ilios was merged into the Company, and accounting for the noncontrolling interest in the subsidiary ended.

The holders of Common Stock have the right to vote their interest on a per share basis. At December 31, 2016 and 2015, there were 19,981,912 and 18,478,990 shares of Common Stock outstanding, respectively.

Preferred Stock

On February 13, 2013, the Company authorized preferred stock of 10 million shares. At December 31, 2016, no shares were issued or outstanding.

Warrants

In December 2015, 900,000 warrants were issued in conjunction with a private placement executed with the Ultra Emissions Joint Venture described in Note 13. In July 2016, the warrant holders exercised a total of 675,000 warrants with a $4.00 exercise price, resulting in cash proceeds of $2.7 million to the Company. The remaining 225,000 warrants expired, July 31, 2016. In conjunction with the Ultratek Joint Venture, the Board of Directors granted 250,000 warrants to Dr. Elias Samaras at $4.00 a share with an expiration date of December 28, 2017.

Stock-Based Compensation

In 2006, the Company adopted the 2006 Stock Option and Incentive Plan (the "Plan"), under which the board of directors may grant incentive or non-qualified stock options and stock grants to key employees, directors, advisors and consultants of the Company. The Plan was amended at various dates by the board to increase the reserved shares of common stock issuable under the Plan to 3,838,750 as of December 31, 2016 (the "Amended Plan").

Stock options vest based upon the terms within the individual option grants, with an acceleration of the unvested portion of such options upon a change in control event, as defined in the Amended Plan. The options are not transferable except by will or domestic relations order. The option price per share under the Amended Plan cannot be less than the fair market value of the underlying shares on the date of the grant. The number of shares remaining available for future issuance under the Amended Plan as of December 31, 2016 and 2015 was 1,607,357 and 1,614,533, respectively.

In 2016, the Company granted nonqualified options to purchase an aggregate of 207,701 shares of common stock for between $0.79 and $4.27 per share to certain employees and a director. Of these options, 82,701 fully vested options were issued in conjunction with the merger of Ilios as replacement options for those previously granted Ilios options in Ilios. The remaining 125,000 options have a vesting schedule of 4 years and expire in 10 years. The fair value of the options issued in 2016 was $236,315. The weighted-average grant date fair value of stock options granted during 2016 was $1.14 per option.

In 2015, the Company granted nonqualified options to purchase an aggregate of 165,000 shares of common stock in a range of $3.39 and $4.05 per share, respectively to certain employees and a consultant. These options have a vesting schedule of four years and expire in ten years. The fair value of the options issued in 2015 was $250,462. The weighted-average grant date fair value of stock options granted during 2015 was $1.52 per option. In October 2015, the Board of Directors modified the performance options granted in 2014 to the Company's standard vesting schedule.

Stock option activity for the year ended December 31, 2016 was as follows:

Common Stock Options	Number of Options	Exercise Price Per Share	Weighted Average Exercise Price	Weighted Average Remaining Life	Aggregate Intrinsic Value
Outstanding, December 31, 2015	1,268,200	$1.20-$5.39	$ 3.06	6.01 years	$ 985,578
Granted	207,701	$0.79-$4.27	3.52		
Exercised	(157,458)	$1.20-$2.60	2.51		
Canceled and forfeited	(200,525)	$3.39-$4.96	3.73		
Outstanding, December 31, 2016	1,117,918	$.79-$5.39	$ 3.10	5.00 years	$ 1,415,150
Exercisable, December 31, 2016	835,293		$ 2.64		$ 1,395,638
Vested and expected to vest, December 31, 2016	1,075,524		$ 3.05		$ 1,415,150

Using the Company's historical forfeiture rate of 15%, the table above uses said rate in the expected to vest calculation. The Company uses the Black-Scholes option pricing model to determine the fair value of stock options granted. Use of a valuation model requires management to make certain assumptions with respect to selected model inputs. Expected volatility was calculated based on the average volatility of four comparable publicly traded companies. The average expected life was estimated using the simplified method to determine the expected life based on the vesting period and contractual terms, since it does not have the necessary historical exercise data to determine an expected life for stock options. The Company uses a single weighted-average expected life to value option awards and recognizes compensation on a straight-line basis over the requisite service period for each separately vesting portion of the awards. The risk-free interest rate is based on U.S. Treasury zero-coupon issues with a remaining term which approximates the expected life assumed at the date of grant.

The weighted average assumptions used in the Black-Scholes option pricing model for options granted in 2016 and 2015 are as follows:

Stock option awards:	2016	2015
Expected life	6.25 years	6.25 years
Risk-free interest rate	1.18%-1.90%	1.63%-1.67%
Expected volatility	27.2%-32.8%	32.4%-32.6%

The Company granted restricted stock awards to its employees and directors. The performance based awards have vesting schedules of 25% or 33% per year beginning one year after the Company's IPO in 2014.

Restricted stock activity for the year ended December 31, 2016 was as follows:

	Number of Restricted Stock	Weighted Average Grant Date Fair Value
Unvested, December 31, 2015	163,350	$ 1.31
Granted	—	—
Vested	(85,842)	1.31
Forfeited	—	—
Unvested, December 31, 2016	77,508	$ 1.31

During the years ended December 31, 2016 and 2015, the Company recognized stock-based compensation of $165,931 and $189,511, respectively, related to the issuance of stock options and restricted stock. No tax benefit was recognized related to the stock-based compensation recorded during the years. At December 31, 2016 and 2015, the total compensation cost related to unvested restricted stock awards and stock option awards not yet recognized is $444,939 and $592,494, respectively. This amount will be recognized over a weighted average period of 2.93 years.

Stock Based Compensation - Ilios

In 2009, Ilios adopted the 2009 Stock Incentive Plan (the "2009 Plan") under which the board of directors may grant incentive or non-qualified stock options and stock grants to key employees, directors, advisors and consultants of the company. The maximum number of shares allowable for issuance under the Plan is 2,000,000 shares of common stock. The 2009 Plan had 1,325,000 available for grant as of March 31, 2016. At the time of the merger between Ilios and the Company, stock options vested with an acceleration of the unvested portion upon the change in control event, as defined in the Plan. These options were exchanged for options for Tecogen stock at the same ratio and price as the share exchange described above. The grant was for a total of 82,701 options. The impact of the option exchange was immaterial.

Ilios has granted restricted stock awards to its employees and directors. The awards had service conditions and vested upon merger. Restricted stock activity for the Ilios awards, for the year ended December 31, 2016 was as follows:

	Number of Restricted Stock	Weighted Average Grant Date Fair Value
Unvested, December 31, 2015	160,000	$ 0.10
Granted	—	—
Vested at completion of merger	(160,000)	0.10
Forfeited	—	—
Unvested, December 31, 2016	—	$ —

Note 11 – Retirement plans

The Company has a defined contribution retirement plan (the "Plan"), which qualifies under Section 401(k) of the Internal Revenue Code (IRC). Under the Plan, employees meeting certain requirements may elect to contribute a percentage of their salary up to the maximum allowed by the IRC. The Company matches a variable amount based on participant contributions up to a maximum of 2.25% of each participant's salary. The Company contributed approximately $96,641 and $179,300 to the Plan in 2016 and 2015, respectively.

Note 12 – Related party transactions

The Company has four related companies, namely ADGE, TTcogen, Tedom USA and Ultratek. These companies may be deemed to be related parties because several of the major stockholders of one or more of these companies have a significant ownership position in the Company, and/or the Company has a significant ownership position in one or more of these companies. The Company does not own any shares of ADGE.

ADGE has a sales representation agreement for the Company's products and services in New England. Revenue from sales of cogeneration and chiller systems, parts and service to American DG Energy during the years ended December 31, 2016 and 2015 amounted to $957,760 and $1,903,427, respectively. Revenue from sales of cogeneration and chiller systems, parts, installations and service to TTcogen during the years ended December 31, 2016 and 2015 amounted to $93,143 and $0, respectively and for Ultratek $22,238 and $0, respectively.

The Company has a line of credit with John N. Hatsopoulos, the Co-Chief Executive Officer of both companies. Details of these transactions can be found in Note 7.

On December 23, 2013, the Company entered into a Senior Convertible Promissory Note with Michaelson Capital Special Finance Fund LP. On April 1, 2016, this note was amended extending the maturity date, security and conversion price. Details of this transaction can be found in Note 7.

John N. Hatsopoulos' salary is $1.00 per year. On average, Mr. Hatsopoulos spends approximately 50% of his business time on the affairs of the Company; however such amount varies widely depending on the needs of the business and is expected to increase as the business of the Company develops.

Since 2006, the Company has a facilities and support services agreement with ADGE. Under this agreement, the Company provides ADGE with certain office and business support services and also provides pricing based on a volume discount depending on the level of ADGE purchases of cogeneration and chiller products. For certain sites, ADGE hires the Company to service its chiller and cogeneration products. The Company also provides office space and certain utilities to ADGE based on a monthly rate set at the beginning of each year. Also, under this agreement, ADGE has sales representation rights to the Company's products and services in New England.

The Company subleases portions of its corporate offices and manufacturing facility to sub-tenants under annual sublease agreements. For the years ended December 31, 2016 and 2015, the Company received $48,092 and $78,468, respectively, from ADGE and EuroSite Power. In addition, for the years ended December 31, 2016 and 2015 the Company received from the same companies, $22,519 and $36,672, respectively, to offset common operating expenses incurred in the administration and maintenance of its corporate office and warehouse facility.

Tecogen pays certain operating expenses, including benefits and insurance, on behalf of ADGE. Tecogen was reimbursed for these costs. As of December 31, 2016 and 2015, the net amount due from ADGE was $87,288 and $1,177,261, respectively. Tecogen also pays for certain operating expenses on behalf of TTcogen, Tedom USA and Ultratek and is reimbursed for these costs. As of December 31, 2016 and 2015, the net amount due from TTcogen was $107,377 and $0, respectively, the net amount due from Tedom USA was $692 and $0, respectively and the net amount due from Ultratek was $65,631 and $0, respectively.

Note 13 – Joint Venture and Investment Activities

On December 28, 2015, Tecogen entered into a joint venture agreement relating to the formation of a joint venture company (“Ultra Emissions”) organized to develop and commercialize Tecogen’s patented technology (“Ultera® Technology”) designed to reduce harmful emissions generated by engines using fossil fuels. The joint venture company, called Ultra Emissions Technologies Ltd., was organized under the laws of the Island of Jersey, Channel Islands.

Tecogen received a 50% equity interest in the Ultra Emissions in exchange for a fully paid-up worldwide license to use Tecogen’s Ultera emissions control technology in the field of mobile vehicles burning fossil fuels. The other half of Ultra Emissions' equity interests were purchased for $3,000,000 by a small group of offshore investors. Warrants to purchase additional equity securities in the Ultra Emissions were granted to all parties pro rata. If the venture is not successful, all licensed intellectual property rights will revert to Tecogen.

Robert Panora, Tecogen’s President, Chief Operating Officer, and one of the inventors of the Ultera technology will serve as Ultra Emissions co-Chief Executive Officer along with Dr. Elias Samaras. Dr. Samaras is the founder, President and Managing Director of Digital Security Technologies S.A. and the Chief Executive Officer of EuroSite Power Inc.

Ultra Emissions is expected to have losses as it performs the necessary research and development with the Ultera technology. On August 2, 2016, Tecogen exercised 2,000,000 warrants (the "Ultratek Warrants"), in the Ultra Emissions, at $1.00 per share, for an aggregate amount of $2 million. The funds used to exercise the Ultratek Warrants were acquired by the Company from the holders of certain Company warrants (the "Tecogen Warrant Holders"), when they partially exercised their Tecogen warrants (the "Tecogen Warrants"), in July of 2016. The Tecogen Warrant Holders exercised a total of 675,000 Tecogen Warrants with a $4.00 exercise price, resulting in cash proceeds of $2,700,000 to the Company, which the Company then used some of the proceeds to invest in the Ultra Emissions. An additional $6,500,000 was raised by the joint venture from other outside investors for a total equity investment to date of $13,500,000. Due to this additional capital raise, Tecogen's ownership has decreased to 43%.

The Company is accounting for its interest in the Ultra Emissions using the equity method. Income and losses will be recorded consistent with an agreement between the Ultra Emissions shareholders as to how income and losses will be allocated. These allocations are consistent with the allocation of cash distributions and liquidating distributions of the Ultra Emissions. The shareholder agreement calls for Tecogen's investment to be returned before any other shareholder if the venture does not achieve commercialization. As a result, as of December 31, 2016, Tecogen has not recorded any of the income or losses of the Ultra Emissions.

TTcogen LLC

On May 19, 2016, the Company along with Tedom a.s., a corporation incorporated in the Czech Republic and a European combined heat and power product manufacturer, ("Tedom") entered into a joint venture, where the Company will hold a 50% participating interest and the remaining 50% interest will be with Tedom. As part of the joint venture, the parties agreed to create a Delaware limited liability company, TTcogen LLC ("TTcogen"), to carry out the business of the venture. Tedom granted TTcogen the sole and exclusive right to market, sell, offer for sale, and distribute certain products as agreed to by the parties throughout the United States. The product offerings of the joint venture expand the current Tecogen product offerings to the MicroCHP of 35kW to large 4,000kW plants. Tecogen agreed to refer all appropriate sales leads to TTcogen regarding the products agreed to by the parties and Tecogen shall have the first right to repair and maintain the products sold by TTcogen.

The TTcogen operations will be accounted for using equity method accounting. Any losses on the initial operation of the entity will not be consolidated in Tecogen's financial statements. Since Tecogen does not guarantee obligations of TTcogen, losses or liabilities of the joint venture are not recorded in the Company's consolidated financial statements. Using the equity method accounting, as the venture becomes profitable with the expected growth, realized gains from profits will be added to the investment asset account on the consolidated balance sheet.

Note 14 – Income taxes

A reconciliation of the federal statutory income tax provision to the Company's actual provision for the years ended December 31, 2016 and 2015 is as follows:

	2016	2015
Pre-tax book income	$ (1,161,245)	$ (2,800,960)
Expected tax at 34%	(394,823)	(952,326)
Permanent differences:		
Machinery & equipment	5,459	5,251
Other	754	444
State taxes:		
Current	—	—
Deferred	(96,754)	120,931
Other items:		
Federal research and development credits	(15,996)	(16,504)
Change in valuation allowance	96,754	(120,931)
Deferred tax past year true-up's	(8,584)	(47,242)
Unbenefited operating losses	413,190	1,010,377
Income tax provision	$ —	$ —

The components of net deferred tax assets recognized in the accompanying consolidated balance sheets at December 31, 2016 and 2015 are as follows:

	2016	2015
Net operating loss carryforwards	$ 6,885,000	$ 6,734,000
R&D and ITC credit carryforwards	145,000	—
Accrued expenses and other	1,740,000	1,297,000
Accounts receivable	11,000	19,000
Inventory	208,000	250,000
Property, plant and equipment	125,000	119,000
Deferred tax assets	9,114,000	8,419,000
Valuation allowance	(9,114,000)	(8,552,000)
Deferred tax assets, net	$ —	$ (133,000)

At December 31, 2016, the Company had approximately $19,099,000 of Federal Loss Carryforwards that expire beginning in the year 2021 through 2036. In addition, the Company has varying amounts of state net operating losses, expiring at various dates starting 2017 through 2036. The Federal net operating losses include approximately $981,000 of deductions related to the exercise of stock options which represent excess tax benefit which will be realized when it results in the reduction of cash income tax in accordance with ASC 718.

Utilization of the loss carryforwards may be subject to a substantial annual limitation due to ownership change limitations that may have occurred previously or could occur in the future, as provided by Section 382 of the Internal Revenue Code of 1986, as well as, similar state provisions. Ownership changes may limit the amount of the carryforwards that can be utilized to offset future taxable income and tax, respectively. In general, an ownership change, as defined by Section 382, results from transactions increasing the ownership of certain shareholders or public groups of stock of a corporation by more than 50 percentage points over a three-year period.

If the Company has experienced a change of control, utilization of its carryforwards would be subject to an annual limitation under Section 382. Any limitation may result in expiration of a portion of the loss carryforwards before utilization. Subsequent ownership changes could further impact the limitation in future years. Further, until a study is completed and any limitation known, no amounts are being presented as an uncertain tax provision.

A full valuation allowance has been provided against the company's loss carryforwards and, if an adjustment is required, this adjustment would be offset by an adjustment to the valuation allowance. Thus, there would be no impact to the balance sheet or statement of operations if an adjustment were required.

The Company did not record a benefit for income taxes related to its operating losses for the years ended December 31, 2016 and 2015.

The Company files tax returns as prescribed by the tax laws of the jurisdiction in which it operates. In the normal course of business the Company is subject to examination by federal and state jurisdictions, where applicable. There are currently no pending tax examinations. The Company is thus still open to examination from tax year 2013 for both federal and state jurisdictions.

Note 15 – Subsequent events

While the Company is not currently a party to any material litigation arising from its operations, it is a party to a claim in the Superior Court of the Commonwealth of Massachusetts and named as a defendant in a case in the United States District Court for the District of Massachusetts, related to the Merger. The Company believes the claims are without merit, and will rigorously defend against said claims.

In January 2017, Tecogen purchased inventory items in the form of repair parts, auxiliary installation equipment, and older model cogeneration equipment from ADGE. This inventory will be consumed in future installation projects and service maintenance contracts. The inventory was purchased for a total of $945,129.

The Company has evaluated subsequent events through the date of this report and determined that no additional subsequent events occurred that would require recognition in the consolidated financial statements or disclosure in the notes thereto.

Exhibit 21.1

LIST OF SUBSIDIARIES

TECOGEN INC.

a Delaware Corporation

Subsidiaries	Jurisdiction
TTcogen LLC	Delaware
Ultra Emissions Technologies Limited	Island of Jersey, Channel Islands
Tecogen.ADGE Acquisition Corp.	Delaware

Exhibit 23.1

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in Registration Statement No. 333-187928 on Form S-8 and Registration Statements (Nos. 333-199634, 333-205147 and 333-212433) on Form S-3 of Tecogen Inc. of our report dated March 22, 2017, relating to our audit of the consolidated financial statements, which appear in this Annual Report on Form 10-K of Tecogen Inc. for the year ended December 31, 2016.

/s/ Wolf & Company, P.C.
Boston, Massachusetts
March 22, 2017

EXHIBIT 31.1

TECOGEN INC.
CERTIFICATION

I, John N. Hatsopoulos, certify that:

1. I have reviewed this Annual Report on Form 10-K of Tecogen Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

    a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

    b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

    c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

    d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

    a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

    b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 22, 2017

/s/ John N. Hatsopoulos
John N. Hatsopoulos
Co-Chief Executive Officer

EXHIBIT 31.2

TECOGEN INC.
CERTIFICATION

I, Benjamin M. Locke, certify that:

1. I have reviewed this Annual Report on Form 10-K of Tecogen Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

    a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

    b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

    c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

    d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

    a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

    b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 22, 2017

/s/ Benjamin M. Locke
Benjamin M. Locke
Co-Chief Executive Officer

EXHIBIT 31.3

TECOGEN INC.
CERTIFICATION

I, David A. Garrison, certify that:

1. I have reviewed this Annual Report on Form 10-K of Tecogen Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 22, 2017

/s/ David A. Garrison
David A. Garrison
Co-Chief Executive Officer

EXHIBIT 32.1

TECOGEN INC.
CERTIFICATION PURSUANT TO 18 U.S.C. SEC. 1350

Each of John N. Hatsopoulos, Benjamin M. Locke, and David A. Garrison, or the Company, certify, pursuant to Section 1350, Chapter 63 of Title 18, United States Code, that, to his or her knowledge:

1. The Annual Report on Form 10-K of the Company for the year ended December 31, 2016, or the Report, fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m or 78o(d)); and

2. The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: March 22, 2017

/s/ John N. Hatsopoulos
John N. Hatsopoulos
Co-Chief Executive Officer

/s/ Benjamin M. Locke
Benjamin M. Locke
Co-Chief Executive Officer

/s/ David A. Garrison
David A. Garrison
Chief Financial Officer, Secretary and Treasurer

The foregoing certification is being furnished solely pursuant to 18 U.S.C. § 1350 and is not being filed as part of the Report or as a separate disclosure document.

A signed original of this written statement required by 18 U.S.C. § 1350 has been provided to the Company and will be retained by the Company and furnished to the Securities and Exchange Commission or its staff upon request.