TECOGEN INC.
Form 10-K
March 25, 2015

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, DC 20549
FORM 10-K

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

For the fiscal year ended December 31, 2014
or

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

Commission file number 333-178697
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) 622-1120
Securities registered pursuant to Section 12(b) of the Exchange Act:

Title of each class	Name of each exchange on which registered
Common Stock, $0.001 par value	NASDAQ Capital Market

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.Yes ¨ No ý
Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Securities Act. Yes ¨ No ý
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 ý 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 ý 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 o Accelerated filer o Non –accelerated filer o Smaller reporting company x
Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).Yes ¨ No ý
State the aggregate market value of the voting and non-voting common equity held by non-affiliates computed by reference to the price at which the common equity was last sold, or the average bid and asked price of such common equity, as of the last business day of the registrant's most recently completed second fiscal quarter. $61,315,132.

As of March 24, 2015, the registrant's shares of common stock outstanding were: 16,338,782.

DOCUMENTS INCORPORATED BY REFERENCE

The definitive proxy statement relating to the registrant's Annual Meeting of Stockholders, to be held June 11, 2014, is incorporated by reference into Part III to the extent described therein (the Proxy Statement).

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 NEGATIV OF THESE TERMS OR OTHER SIMILAR WORDS. THESE STATEMENTS ARE ONLY PREDICTIONS. THE OUTCOME OF THE EVENTS DESCRIBED IN THESE FORWARD-LOOKING STATEMENTS 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,” “MANAGEMENT’S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS” AND “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.

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FOR THE FISCAL YEAR ENDED DECEMBER 31, 2014
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Item 1. Business

Overview

Tecogen® designs, manufactures, sells, and services systems that produce electricity, hot water, and air conditioning for commercial installations and buildings and industrial processes. These systems, powered by natural gas engines, are efficient because they drive electric generators or compressors, which reduce the amount of electricity purchased from the utility, plus they use the engine's waste heat for water heating, space heating, and/or air conditioning at the customer's building. We call this cogeneration technology CHP for combined heat and power.

Tecogen manufactures three types of CHP products:

•Cogeneration units that supply electricity and hot water;
•Chillers that provide air-conditioning and hot water; and
•High-efficiency water heaters.

All of these are standardized, modular, small-scale CHP products that reduce energy costs, carbon emissions, and dependence on the electric grid. Market drivers include the price of natural gas, local electricity costs, and governmental energy policies, as well as customers' desire to become more socially responsible. Traditional customers for our cogeneration and chiller 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; however, the economic feasibility of using our systems is not limited to these customer types. Through our factory-owned service centers in California, New York, Massachusetts, Connecticut, New Jersey, and Michigan our specialized technical staff maintain our products through long-term contracts. We have shipped approximately 2,000 units, some of which have been operating for almost 25 years. We have 72 full-time employees and 3 part-time employees, including 6 sales and marketing personnel and 31 service personnel.

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 proved to be cost-effective and reliable. In 2009, our research team developed a low-cost process for removing air pollutants from the engine exhaust. Because these systems are fueled by natural gas, they typically produce lower levels of "criteria" air pollutants (those that are regulated by the EPA, because they can harm human health and the environment) compared with systems fueled by propane, gasoline, distillates, or residual fuel oil. We offer our new Ultra low-emissions technology as an option in our CHP systems.

After a successful field test of more than a year, we introduced the technology commercially as an option for all of our products under the trade name Ultra. This technology was patented in the US in October 2013 with many foreign patents granted or applications pending. The Ultra low-emissions technology repositions our engine-driven products in the marketplace, making them comparable environmentally with emerging technologies such as fuel cells, but at a much lower cost and greater efficiency.

Our products are designed as compact modular units that are intended to be applied in multiples when utilized for larger CHP plants. Approximately 68% of our CHP modules are installed in multi-unit sites ranging up to 12 units. This approach has significant advantages over utilizing single, larger units, such as building placement in constrained urban settings and redundancy during service outages. Redundancy is particularly relevant in regions where the electric utility has formulated tariff structures that have 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 assess 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 is highly detrimental to the monthly savings of the system. For multiple unit sites, a full system outage is less likely and consequently these customers have a greater probability of capturing peak demand savings.

Our exclusively licensed microgrid technology 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.

Our CHP products are sold directly to customers by our in-house marketing team and by established sales agents and representatives, including American DG Energy and EuroSite Power which are affiliated companies.

In 2009, we created a subsidiary, 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 conventional boilers in commercial buildings and industrial processes (see “Our Products” below). As of the date of this filing, we own a 63.7% interest in Ilios.

Tecogen was formed in the early 1960s as the Research and Development New Business Center of Thermo Electron Corporation, which is now Thermo Fisher Scientific Inc. For the next 20 years, this group performed fundamental and applied research in many energy-related fields to develop new technologies. During the late 1970s, new federal legislation enabled electricity customers to sell power back to their utility. Thermo Electron saw a fit between the technology and know-how it possessed and the market for cogeneration systems.

In 1982, the Research and Development group released its first major product, a 60-kilowatt, or kW, cogenerator. In the late 1980s and early 1990s, they introduced air-conditioning and refrigeration products using the same gas engine-driven technology, beginning with a 150-ton chiller (tons are a measure of air-conditioning capacity). In 1987, Tecogen was spun out as a separate entity by Thermo Electron and, in 1992, Tecogen became a division of the newly formed Thermo Power Corporation.

In 2000, Thermo Power Corporation was dissolved, and Tecogen was sold to private investors including Thermo Electron's original founders, Dr. George N. Hatsopoulos and John N. Hatsopoulos. Tecogen Inc. was incorporated in the State of Delaware on September 15, 2000. Our business and registered office is located at 45 First Avenue, Waltham, Massachusetts, 02451. Our telephone number is 781-466-6400.

Industry Background

During the 20th century, fossil-fuel power plants worldwide evolved toward large, complex central stations using high-temperature steam turbines. This technology, though steadily refined, reached a maximum efficiency of about 40% that persists to this day. As used throughout, efficiency means electrical energy output per unit of fuel energy input. According to the EPA website, the average efficiency of fossil-fuel power plants in the United States is 33% and has remained virtually unchanged for four decades.

CHP, which harnesses waste energy from the power generation process and puts it to work on-site, can boost the efficiency of energy conversion to nearly 90%, a better than two-fold improvement over the average efficiency fossil fuel plant.

The implications of the CHP approach are significant. If CHP were applied on a large scale, global fuel usage might be curtailed dramatically. Small on-site power systems, in sizes like boilers and furnaces, would serve customers ranging from homeowners to large industrial plants. This is described as "distributed" energy, in contrast to central power.

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 grid is already challenged to keep up with existing power demand. The grid consists of power generation plants as well as the transmission and distribution network consisting of substations and wires.

In addition, the transmission and distribution network is operating at capacity in urban areas. Decentralizing power generation by installing equipment at customer sites not only relieves the capacity burden on existing power plants, but also unburdens transmission and distribution lines. This ultimately improves the grid's reliability and reduces the need for costly upgrades. Consolidated Edison, Inc., the electric utility of New York City and surrounding areas, has identified an opportunity to integrate energy efficiency, distributed generation, and demand response as a way to defer new infrastructure investments, according to the utility's published long-range plan.

We believe that 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.

Strategy for Growth

Target markets and new customers

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 overlap with those for our cogeneration systems. Chiller applications include schools, hospitals and nursing homes, office and apartment buildings, hotels, retailers, ice rinks and industrial facilities. Engine-driven chillers are utilized as replacements for aging electric chillers, because they both occupy similar amounts of floor space.

The Company believes that the largest number 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, as discussed above. 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 align with our advantages. These areas would 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.

Company's Solution

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 within the last two years, such as our Ultra low-emissions technology our products can now contribute to better air quality at the local level.

According to our estimates and public sources, our cogeneration systems convert nearly 90% of the natural gas fuel to useful energy in the form of electricity and hot water or space heat. This compares to about 40% for central power. Other on-site upgrades such as insulation or lighting can help cut energy use as well, but they do not displace nearly as much low-efficiency electricity. Our engine-driven chillers, when the waste heat is effectively used, offer similar efficiency benefits compared with running an electric chiller plus a furnace or boiler.

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 50% 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.

Our water heater product, introduced by Ilios, operates like an electric heat pump but uses a natural gas engine instead of an electric motor to power the system (see “Our Products” for an explanation of the heat pump). 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.

The net effect is that our heat pump’s efficiency far surpasses that of conventional boilers for water heating. Similarly, if used for space heating, the engine-powered heat pump would be more efficient than an electric heat pump, again because heat is recovered and used. The product’s higher efficiency translates directly to lower fuel consumption and, for heavy use customers, significantly lower operating costs.

Our products also address the global objective of reducing greenhouse gas emissions. When burned to generate power, natural gas produces lower carbon emissions per unit of energy than any fossil fuel (Table 1), according to the EPA combined heat and power emissions calculator.

Table 1 — Fossil Fuel Carbon Emissions

Source: EPA Emissions Calculator

Fuel	CO2 emissions, lbs/million Btu
Natural Gas	116.7
Distillate Oil	160.9
Coal	206.7

Our products, in addition to using the lowest amount of carbon fuel, further reduce CO2 emissions (greenhouse gases) because of CHP’s higher efficiency. Figure 1 compares the CO2 output of our products to that of the national electric grid and other generation technologies. Our products are far superior to the grid and even outperform the CHP technologies of fuel cells and microturbines.

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Figure 1 — Comparison of Carbon Emissions (GHG) for Various Sources
Including Tecogen's CHP and Chiller Products
Sources:

(1) Average U.S. Powerplant CO2 emission rate of 1,293 (lb/MWh) from USEPA eGrid 2010.
(2) Coal Combined Cycle emissions based upon 50% efficiency (assumed to be the same as Natural Gas) and coal CO2 emission rate from EPA website.
(3) "Best in Class" Natural Gas combined cycle plant emissions based upon 50% efficiency. (Northwest Power Planning Council "Natural Gas Combined-cycle Gas Turbine Power Plants, August 2002).
(4) Fuel Cell and Microturbine emissions based upon data listed in the ICF International Combined Heat and Power Market Assessment, April 2010.

Furthermore, one Tecogen 100-kW CHP unit will reduce carbon emissions by 390 tons per year (based on 8,000 run-hours), which, according to the EPA website's calculator, is the equivalent of 64 cars on the road. A microturbine of the same size would reduce carbon emissions by only 245 tons per year, the equivalent of 41 cars, which is less than two-thirds the emissions reduction of our CHP product. Our Ilios water heater also reduces CO_2 emissions in proportion to its fuel savings.

In addition to reducing greenhouse gases, our products with Ultra low-emission controls can improve air quality by reducing such pollutants as NOx and CO. Figure 2 presents the annual output of emissions of the InVerde unit equipped with the Ultra technology and compares it to alternative energy technologies producing the equivalent energy output on an annual basis (100 kW, 670,000 Btu/hr). Thus, for example, in lieu of an InVerde, a building would obtain electricity from a power plant and heat energy from a boiler. As Figure 2 shows, the Ultra CHP system's emissions are significantly less than the combined emissions of the power plant and boiler for the same energy output.

Figure 2 — Comparison of Emissions Levels of Tecogen's Ultra Low-Emissions Technology to Conventional Energy
(Based on 6,000 hrs/year of operation at 100 kW and 670,000 Btu/hr)
Sources:

(1) Based upon an annual output of 100 kW and 670,000 Btu/hr of hot water.
(2) Average U.S. powerplant NOx emission rate of 1.7717 lb/MWh from (USEPA eGrid 2010), CO data not available.
(3) Gas boiler efficiency of 78% (www.eia.gov) with emissions of 20 ppm NOx @ 3% O2 (California Regulation SCAQMD Rule 1146.2) and 50 ppmvCO @ 3% O2 (California Regulation SCAQMD BACT).

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Figure 3 presents the criteria pollutant levels of the Ultra system versus alternative CHP sources of microturbines, fuel cells, and conventional reciprocating engines. Microturbines and fuel cells, newer CHP technologies typically considered low-emission alternatives to engines, produce more NOx than an Ultra engine CHP unit. Moreover, when compared to a conventional engine's "best available control technology" (BACT) as defined by the EPA for natural gas engines, both Nitrous Oxide (NOx) and Carbon Monoxide (CO) are reduced by nearly tenfold. Consequently, the Ultra low-emissions technology is potentially transformative to the engine's reputation in the energy marketplace, allowing it to now be characterized as a source of clean power.

Figure 3 — Comparison of Tecogen Ultra Low-Emissions Technology to Other Technologies

Sources:

(1) Tecogen emissions based upon actual third party source test data.

(2) Microturbine and Fuel Cell NOx data from California Energy Commission, Combined Heat and Power Market Assessment 2010, by ICF international.

(3) Stationary engine BACT as defined by SCAQMD.

(4) Limits represent CARB 2007 emission standard for Distributed Generation with a 60% (HHV) Overall Efficiency credit.

(5) CO data not available for microturbine and fuel cell.

Contributions to Revenue

The following table summarizes net revenue by product line and services for the years ended December 31, 2014 and 2013:

	2014	2013
Products:		
Cogeneration	$5,364,810	$5,199,649
Chiller	3,260,224	1,146,401
Total product revenue	8,625,034	6,346,050
Services	7,438,125	7,071,388
Installations	3,279,505	2,432,431
Total service revenue	10,717,630	9,503,819
Total revenue	$19,342,664	$15,849,869

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

Our Products

We manufacture natural gas engine-driven cogeneration systems and chillers, all of which are CHP products that deliver more than one form of energy. We have simplified CHP technology for inexperienced customers. Our cogeneration products are all standard, modular units that come pre-packaged from the factory. They include everything the customer needs to minimize the cost and complexity of installing the equipment at a site. The package incorporates the engine, generator, heat-recovery equipment, system controls, electrical switchgear, emission controls, and modem for remote monitoring and data logging.

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 engine that is enhanced for industrial applications.

Our commercial product line includes:

- The InVerde® and TECOGEN® cogeneration units;
- TECOCHILL® chillers;
- Ilios high-efficiency water heaters; and
- Ultra low-emissions 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. 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 maximize efficiency at varying loads. The inverter then converts the generator’s variable output to the constant-frequency power required by customers (50 or 60 Hertz), as shown in Figure 4.

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) — a status that the InVerde has acquired. This qualifies our product for a much simpler permitting process nationwide and is mandatory in some areas such as New York City and California. 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.

The InVerde CHP system was developed in 2007, and we began shipping it 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).

Figure 4 — Diagram of InVerde CHP System

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TECOGEN Cogeneration Units

The TECOGEN cogeneration system is the original model introduced in the 1980s, which is available in sizes of 60 kW and 75 kW, 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 population, much of its production volume has been supplanted by the InVerde.

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. This technology was 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 hot water or heat. 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. Gas-fueled chillers also free up the building's existing electrical capacity to use for other loads.

Ilios High-Efficiency Water Heaters

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. Heat pumps extract heat from outside and move it indoors. In both cases, fluids move the heat around by flowing through heat exchangers. At various points the fluids are compressed or expanded, which absorbs or releases heat. In 2013, additional an model of the heat pump was added which captures heat from a water source such as geothermal well or from an pre-existing chilled water loop in the facility; the latter configuration is doubly beneficial in that the process provides a simultaneous heating and cooling benefit.

In the Ilios water heater, the heat pump moves heat from outdoors to the water being heated in the customer's building. The heat pump water heater serves as a boiler, producing hot water for drinking and washing or 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.

In a conventional electric heat pump, the compressor is driven by an electric motor. In the Ilios design, a natural gas-fueled engine drives the compressor. This means that the heat being captured from outdoors is supplemented by the engine's waste heat, which increases the efficiency of the process. Gas engine heat pumps can deliver efficiencies in excess of 200%.

Ultra Low-Emissions Technology

All of our CHP products are available with the Ultra low-emissions technology. This breakthrough technology was developed in 2009 and 2010 as part of a research effort funded by the California Energy Commission and Southern California Gas Company. The objective was to bring our emission control systems into compliance with California's standards, which are the most stringent in the United States.

We were able to meet or exceed the standards with an emission control system that is cost-effective, robust, and reliable. The Ultra low-emissions technology keeps our CHP systems compliant with air quality regulations over the long term. We shipped the first commercial CHP units equipped with Ultra low-emissions technology 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. We did so by equipping one of our TECOGEN 75-kW units, already operating at a customer location in Southern California, with the Ultra low-emissions technology and a device to monitor emissions continuously. To date, the Ultra low-emissions system has operated successfully for more than 25,000 hours (approximately 3 1/2 years) and has consistently complied with California's emission standards. This

field test is ongoing.

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 Ultra low-emissions systems to several customers.

In 2012, a 75 kW CHP unit equipped with the Ultra 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 place 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.

Product Reliability

Our product lines 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 (% of 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.

Product Service

We provide long-term maintenance contracts, parts sales, and turnkey installation through a network of eight 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 can maintain communications, in which case we contact the machines 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 that a unit has experienced an unscheduled shutdown.

Our service managers, supervisors, and technicians work exclusively 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 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 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, so that the integrity and performance of the machine are maintained.

Research &Development Capabilities

Our research and development tradition and ongoing programs have allowed us to cultivate deep engineering expertise and maintain continuity over several decades. We have strong core technical knowledge that is critical to product support and enhancements. Our TecoDrive engine, cogeneration and chiller products, InVerde, and most recently the InVerde Ultra and Ilios heat pump water heater were all created and optimized with both public and private funding support.

In March 2013, we successfully completed a $1 million program with the California Energy Commission, originally awarded in 2009, to develop a small CHP engine (about 35 kW) that uses advanced automotive technology. The engine achieves a nearly 20% fuel efficiency gain over our current TecoDrive technology. The program included an endurance test to qualify the engine for the CHP duty cycle. Transition to the new advanced engine occurred with the Ilios water heating product.

In October 2012, Tecogen was awarded a contract for a demonstration project to retrofit a natural-gas powered municipal water pump engine with Tecogen's proprietary Ultra low-emissions technology. This project, co-sponsored by Southern California Gas Co. (SoCalGas), DE Solutions, and the Eastern Municipal Water District (EMWD) will be the first application of Tecogen's emission control technology on a non-Tecogen engine, and an important proof of concept for its wider application. This system was commissioned in September 2013.

Tecogen also continues to support a contract with the DOE's Lawrence Berkeley National Laboratory, awarded in 2012, for microgrid development work related to the InVerde.

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Alliances

We continue to forge alliances with utilities, government agencies, universities, research facilities, and manufacturers. We have already succeeded in developing new technologies and products 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.
- Lawrence Berkeley National Laboratory — research and development contracts since 2005.
- Consortium for Electric Reliability Technology Solutions — research and development contracts and provided a test site to the Company since 2005.
- California Energy Commission — research and development contracts from 2004 until March 2013.
- The AVL California Technology Center — support role in performance of research and development contracts as well as internal research and development on our emission control system from August 2009 to November 2011.

We also have an exclusive licensing agreement from the Wisconsin Alumni Research Foundation (WARF) for its proprietary control software that enables our microgrid system. 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, 2013. 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.

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 Ultra 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, 2014, such royalties accrued in accordance with this grant agreement were less than $10,000 on an annual basis.

We also continue to leverage our resources with government and industry funding, which has yielded a number of successful developments. These include the Ultra low-emissions technology, sponsored by the California Energy Commission and Southern California Gas Company, and new 35-kW engine technology we developed with the California Energy Commission’s support. 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, 2014 and 2013, we spent approximately $1,041,483 and $1,086,989, respectively, in research and development activities.

Distribution Methods

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, including American DG Energy and EuroSite Power which are affiliated companies, for certain territories and product lines. For example, we have sales representatives for the chiller market in the New York City/New Jersey territory, but we do not have a sales representative for our cogeneration products in this territory. In New England, our affiliate, American DG Energy, has exclusive sales representation rights to our cogeneration products only (not including chillers). Sales through our in-house team or sales that are not covered by a

representative's territory carry no commission or only a fractional one.

Competitive Position and Business Conditions

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.

Renewable power sources, such as wind and solar, do not improve heating inefficiencies as CHP systems do, so they do not compete with our products. That is, CHP utilization is based on the redirection of fuel from an onsite boiler to an engine (or other device) for the production of electricity; the waste heat from the engine meets the heating load of the site with only a small incremental fuel consumption increase, but with the benefit of a significant amount of electricity production. As the boiler output cannot be displaced by renewable electricity production — the output of which is far more valuable displacing utility electric power, than used for water heating — the CHP opportunity remains available even in sites fully exploited relative to their renewable potential.

Cogeneration Systems

Our CHP products use automotive reciprocating engines originally designed for gasoline fuel and modified to run on natural gas. Diesel-fueled reciprocating engines will remain prominent in the CHP market, but only in larger, custom-designed systems (one MW or more), so these products do not compete with ours.

In smaller CHP sizes, competitors have duplicated our older design, coupling an automotive engine to a single-speed generator and adding controls and heat recovery. To be competitive with our designs, however, they would have to acquire comparable experience in the equipment and technology, installation contracting, maintenance and operation, economic evaluation of candidate sites, project financing, and energy sales, as well as the ability to cover broad regions. They would also have to meet the price of our products, which is low because we use standardized components.

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

Our patents and applications relating to the Ultra low-emissions technology were issued or pending by October 2013. We expect that this will make the development of alternative technologies by competitors difficult. If this is the case, we could retain a strong competitive advantage for all our products in markets where severe emissions limits are imposed or where very clean power is favored, such as New Jersey, California, and Massachusetts.

With regard to pollutant emissions, Figure 3 above, compares all three technologies, along with the Tecogen engine CHP equipped with the Ultra technology. This figure illustrates that although fuel cells and microturbines are cleaner than conventional engine CHP (i.e., BACT), an engine equipped with Ultra technology now has comparable emissions to these other two technologies.

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 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. We believe that Capstone Turbine Corporation is the only microturbine manufacturer with a commercial presence in CHP.

Engine Driven Chillers (TECOCHILL)

According to the Energy Solutions Center (a non-profit consortium), three companies make gas-engine-driven chillers that compete with our products: Trane, a division of Ingersoll-Rand plc, York, a division of Johnson Controls, Inc. and Alturdyne. Natural gas can also fuel absorption chillers, which use fluids to transfer heat without an engine drive. Today’s low natural gas prices in the United States improve the economics of gas-fueled chillers, so more competition could emerge. However, engine chillers will continue to have an efficiency advantage over absorption machines. Chiller performance is measured in terms of cooling energy output per unit of fuel input. This industry standard is called the coefficient of performance, or COP. Absorption chillers achieve COPs of about 1.2. Our TECOCHILL products reach efficiencies well above that level (COPs ranging from 1.6 to 2.6).

Ilios Engine-Driven Heat Pump

Although a few companies manufacture gas-engine heat pumps, their products are not directly comparable to the Ilios. The Ilios water heater and other heat pump products compete in both the high-efficiency water heating market and the CHP market. In a typical building, the Ilios heat pump would be added on to an existing heating/water heating system,

but would be operated 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.

The best customers for the Ilios heat pump water heater would be very similar to those for traditional CHP — heavy consumers of hot water and process heat. In areas where low electric rates make CHP not 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 work economically.

Intellectual Property

We currently hold three United States patents for our technologies:

- 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 Ultra 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. It applies to most of our engines.

In addition, we have 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 specific 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.

We consider our patents and license to be important in the present 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, that licensed from WARF, was issued in 2006 and expires in 2022. Most of our patents expire between 2022 and 2027.

We believe that no 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. This key component of our InVerde module uses this acquired technology.

The recent issuance by the U.S. PTO of the patent for the Ultra 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 natural gas engines. We have also filed for or been granted patents for this technology in Europe, Australia, Brazil, Canada, China, Costa Rica, the Dominican Republic, India, Japan, Mexico, New Zealand, Republic of Korea, Singapore, and South Africa. There is no assurance, however, that the Ultra low-emissions patent applications will be approved in any other country.

Government Regulation and Its Effect on Our Business

Several kinds of government regulations affect our current and future business, such as:

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

Regulations that control air quality and greenhouse gases might increasingly favor our low-emission products. Regulations related to utility rates and interconnection, which are burdensome today, could evolve to embrace CHP because of its efficiency benefits.

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Product Safety Certifications and Interconnection Requirements

Our products must comply with various local building codes and must undergo inspection by local authorities. Our products are also certified by a third party to conform to specific standards. These certifications require continuous verification by a company that monitors our processes and design every three months. Our InVerde product is also certified to Europe's standard CE mark (European Conformity), which is mandatory for products imported into the European Union for commercial sale.

Our cogeneration CHP products are also certified to a particular group of standards specific to the distributed power industry, which are used in the utility interconnection permitting process. These unique certifications were developed by various manufacturers, utilities, and government regulators to standardize the process of getting the utility's permission to jointly power a facility.

In essence, manufacturers of standard products are allowed to submit a sample unit to be "type-tested" by a Nationally Recognized Testing Laboratory. This test proves that the product adheres to safety requirements and that its design is fail-safe. The product then becomes eligible for a fast-track interconnection, after passing simple site-specific screens. Under state-mandated regulations, such as California Rule 21 and Massachusetts Interconnection Tariff 09-03, most utilities must accept the fast-track process, which includes the certification.

Simplified utility interconnection is important to CHP projects, so our interconnect certification, Underwriters Laboratory Standard 1741, or UL Certification, is a significant competitive advantage. Obtaining the UL Certification was a major reason for us to develop the inverter-based CHP product. As with our other product certifications, we plan to maintain the certification through routine processes when modest design changes occur. When complete recertification is required, such as when a new revision to the standard is applicable or when the design undergoes a major upgrade, the company will follow the normal procedures for first-time certification (third party design review and test verification). The company does not anticipate any changes to the standard that would preclude recertification, as the underlying content is carefully administered by balanced committees (representing utilities, inverter suppliers, and academia). In addition, the standard and its utilization as the criterion for systems to qualify for simplified interconnection programs, is important for the solar PV industry. The company believes that this importance to the solar industry will help assure the long-term relevance in interconnection of distributed generation devices.

Air Pollution Regulations

Stationary natural gas engines are subject to emissions regulations that are part of a complex hierarchy of state and federal regulations. The EPA establishes technology-specific standards that are based on cost-benefit analysis for emission control strategies. These standards, termed BACT (best available control technology), are imposed in regions that fail to meet federal clean air standards. Local regulators can and do restrict engine emissions to lower levels.

In some instances, regional standards in our key markets have become sufficiently strict, presenting a challenge in controlling pollution from natural gas engines. However, our development of the Ultra low-emissions technology has addressed this issue, allowing us to permit our equipment in the strictest region of Southern California. In January 2013, a state-certified source test at a new customer's site verified that our emissions levels were well below the new permitting requirements. Since we have now successfully removed this barrier, we are not only competitive in the California market, but have an advantage as a cleaner CHP technology. Likewise, in the Northeast where emissions regulations are trending towards California levels, we have already established our Ultra CHP as a certified technology in New Jersey, exempt from the air permitting process and subsequent testing, a unique status that separates us from the competition.

On the East Coast, important CHP territories are also moving toward limits below federal BACT levels. Effective in 2012, Massachusetts, Rhode Island, and Connecticut require 3.6 ppm NOx and about 56 ppm CO, which is on par with California's BACT standard. New Jersey also emulates California's BACT, but allows the project to side-step the air permit process if the CHP device is "emissions certified" through third-party testing to 10 ppm NOx and 10 ppm CO. Our Ultra low-emissions technology has qualified for New Jersey's "clean" certification, as noted earlier. In New York, clean power is encouraged through state grants that exclude products, or reduce the grant amount, unless low emissions are demonstrated.

Air emissions regulations also affect our air conditioning and Ilios heat pump products, though the effects are muted. TECOCHILL rebates are not common, and none has been tied to a specific emissions level. The heat pump's small size often exempts it from regulations, and the market for heat pump products could lie in lightly regulated regions (those with low electric rates). Nevertheless, the Ultra low-emissions technology can be applied to these products if required to meet regulatory standards.

State and Federal Incentives

Some states offer incentives to CHP systems. New York and New Jersey have incentive programs that rebate a significant portion of the CHP project cost. Similar incentive programs also exist in Massachusetts, Rhode Island, and Maryland albeit with different structures and terms. Massachusetts has an additional CHP incentive in the form of an annual rebate proportional to the carbon savings versus conventional technology.

Our products installed before January 1, 2014 are eligible for the bonus depreciation included in the 2012 American Taxpayer Relief Act. Also, the Energy Improvement and Extension Act of 2008 provides a 10% investment tax credit through 2016 for CHP in our size range, which applies to the total project cost. Our TECOCHILL and heat pump products also qualify for the credit when heat recovery achieves a minimum 60% efficiency.

Electric Utility Pricing and Related Regulations

Electricity prices, rate structures, and tariffs are another form of government incentive or disincentive. Utility pricing is administered through state agencies, typically public utility commissions, through formal proceedings involving the public, utilities, and various affected parties. Often, direct legislative mandates apply to specific issues. How these rules are structured and interpreted has a significant impact on the economic viability of CHP. These rules have hurt the CHP industry in the past, but we have designed our products to undermine their impact.

Demand Charges. Many electric utilities structure their commercial rates such that part of the customer's bill is fixed charges such as meter fees, and part is peak demand charges, which are a much larger line-item based on the building's maximum short-term usage (typically 15 minutes). Fixed charges, usually small, are not addressed by CHP technology. Avoidance of peak demand charges requires a CHP system to always operate at extremely high efficiency, which is difficult to achieve in practice.

Our CHP products, being small and modular, are often installed as multiple units. This protects the customer to some degree from incurring peak demand charges at the full system rating by providing equipment redundancy. The customer would then have to buy more electricity to make up for it, possibly incurring a large demand charge. With a modular, multi-unit CHP system, all the units would have to fail simultaneously to incur an equivalent charge.

Our TECOCHILLs are highly effective in eliminating not only summertime electricity usage, but also peak demand charges. The chiller's operation is confined to the cooling season, allowing maintenance to be scheduled for other times. Outages during the cooling season can be managed to minimize their impact.

Avoided-Cost Penalties. In some regions, utilities have argued that CHP customers, by reducing their electric usage, have avoided paying their fair share of the costs associated with grid infrastructure. To correct this perceived inequity, some utilities have successfully petitioned their state commissions to impose a "departing load charge." Utilities have also been allowed to add a "standby" surcharge to compensate for the cost of utility power being available when the CHP system is down.

These types of charges are not prevalent in East Coast states, but both standby and departing load charges are well-established in California. Although our CHP products are affected, our chillers and heat pumps are not.

Technology-Specific Net Metering. Interconnection issues are safety-related and should be product-neutral, but technology bias is common. In many states, CHP is excluded from net metering while other technologies are eligible. Under net metering, utilities must pay on-site generators for excess electricity that is fed into the grid. Net metering makes it easier to manage the operation of a CHP system or other generator.

Other Utility-Related Regulations. Another category of utility regulation that might affect our business is Renewable Portfolio Standards, or RPS. As of December 2012, some form of portfolio standards had been established in 38 states and the District of Columbia. According to the EPA, out of these states, 26 — Arizona, Connecticut, Delaware, Colorado, Hawaii, Illinois, Indiana, Louisiana, Maine, Massachusetts, Michigan, Minnesota, Nevada, New Hampshire, New York, North Carolina, North Dakota, Ohio, Oklahoma, Pennsylvania, Rhode Island, South Dakota, Utah, Vermont, Washington and West Virginia — specifically mention CHP and/or waste heat-to-power as eligible under their RPS (or related efficiency/clean energy program guidelines). RPS-type mechanisms have been adopted in several other countries, including United Kingdom, Italy, Poland, Sweden, Belgium, and Chile.

Overall, RPS appears to be a positive policy for Tecogen and CHP. Program structures, if fair and balanced, encourage less fossil fuel use by offering financial incentives to improve efficiency. Electric power generated from renewable sources would tend to increase overall electric rates and improve CHP investment returns. Since these programs are in their early stages, their impact is yet to be determined.

Employees

As of December 31, 2014, we employed 72 full-time employees and 3 part-time employees. We believe that our relationship with our employees is satisfactory. Three of our New Jersey service employees are represented by a

collective bargaining agreement which was executed on February 25, 2014 with a retroactive effective date of January 1, 2014.

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Item 1A. Risk Factors

Our business faces 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 occurs, 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

Our operating history is characterized by net losses. We anticipate incurring further losses, and we may never become profitable.

For each of our last five fiscal years and prior thereto, we have incurred annual operating losses. We expect this trend to continue until such time that we can sell a sufficient number of systems and achieve a cost structure to become profitable. We may not have adequate cash resources to reach the point of profitability. Even if we do achieve profitability, we may be unable to increase our sales and sustain or increase our profitability in the future.

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 2013 increased in the first, third and fourth quarters and decreased in the second quarter. In 2014, our revenues increased during the second and the fourth quarters and decreased in the first and third quarters. Fluctuations cannot be predicted because they are affected by the purchasing decisions and timing requirements of our customers, which are unpredictable.

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

If our funds are 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 of 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 costs 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.

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 many of our products. Our engine supplier, our generator supplier for our cogeneration products, other than the InVerde, and to produce air conditioning, our engines drive a compressor are all purchased from large multinational equipment manufacturers. The loss of one 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.

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.

We have applied for and obtained patents on certain key components used in our products. Specifically, the Company holds three patents, all of which are utilized in our products. In addition, we have rights to a 2006 University of Wisconsin patent enabling us to use that patent’s microgrid control algorithms for our specific use: engine-based power generation fueled by natural gas and diesel for engines less than 500 kW in electric power output. Also, the Company acquired rights to several patents and technologies included in the permanent magnet generators. The Company continues to apply for patents in the United States and other countries related to our technologies.

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.

Our control software is protected by copyright laws or under an exclusive license agreement. Further, we rely on treatment of our technology as trade secrets through confidentiality agreements, which our employees and vendors are required to sign. We also rely on non-disclosure agreements with others that have or may have access to confidential information to protect our trade secrets and proprietary knowledge. These agreements may be breached, and we may not have adequate remedies for any breach. Our trade secrets may also be or become known without breach of these agreements or may be independently developed by competitors. Failure to maintain the proprietary nature of our technology and information could harm our results of operations and financial condition.

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.

Certain businesses and consumers might not consider cogeneration solutions as a means for obtaining their electricity and power needs.

Generating electricity and heat at the customers' building (on-site CHP) is an established technology, but it is more complex than buying electricity from the utility and using a furnace for heat. Customers have been slow to accept on-site CHP in part because of this complexity. In addition, the development of a larger market for our products will be impacted by many factors that are out of our control, including cost competitiveness, regulatory requirements, and the emergence of newer and potentially better technologies and products. If a larger market for cogeneration technology in general and our products in particular fails to grow substantially, we may be unable to continue our business.

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.

We have granted sales representation rights to an affiliated company, which restricts our distribution.

Our affiliates American DG Energy and EuroSite Power Inc. have certain exclusive sales representation rights to our cogeneration products only (not including chillers) and exclusive rights to our Ultra low-emissions technology if it is applied to engines from other CHP manufacturers in projects developed by American DG Energy (see "The Company and Its Affiliates" in the "Business" section of this Annual Report on Form 10-K). As a result of these agreements, we have limited control over our distribution of certain products in New England, and this could have a material adverse effect on our business and results of operations.

Commodity market factors impact our costs and availability of materials.

Our products contain a number of commodity materials, from metals, which include steel, special high temperature alloys, copper, nickel and molybdenum, to computer components. The availability of these commodities could impact our ability to acquire the materials necessary to meet our requirements. The cost of metals has historically fluctuated. The pricing could impact the costs to manufacture our products. If we are not able to acquire commodity materials at prices and on terms satisfactory to us or at all, our operating results may be materially adversely affected.

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 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.

Risks Related 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 may be subject to securities 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.

We are controlled by a small group of majority stockholders, and our minority stockholders will be unable to effect changes in our governance structure or implement actions that require stockholder approval, such as a sale of the Company.

George N. Hatsopoulos and John N. Hatsopoulos, who are brothers, beneficially own approximately 48.0% of our outstanding shares of Common Stock. These stockholders have the ability to control various corporate decisions, including our direction and policies, the election of directors, the content of our charter and bylaws and the outcome of any other matter requiring stockholder approval, including a merger, consolidation and sale of substantially all of our assets or other change of control transaction. The concurrence of our minority stockholders will not be required for any of these decisions. This concentration of voting power could delay or prevent an acquisition of us on terms that other stockholders may desire. The interests of this group of stockholders may not always coincide with your interests or the interests of other stockholders and they may act in a manner that advances their best interests and not necessarily those of other stockholders, including seeking a premium value for their Common Stock, which might affect the prevailing market price for our Common Stock.

There has been 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 of our fiscal year end, December 31, 2014, 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, 2014. 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.

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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.

None.

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 27,000 square feet of manufacturing, storage and office space. We sub-lease the remaining space to Ilios, American DG Energy, and other tenants. Our lease, with an original expiration date of March 31, 2014, was renewed for an additional ten years and will expire March 31, 2024. We believe that our facilities are appropriate and adequate for our current needs.

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

As of December 31, 2014, the service centers that fit this larger category are based in Piscataway, New Jersey, Valley Stream and Mount Vernon, NY to service the Metro New York and Mid-Atlantic region. The San Francisco bay area and Northern California is served by such a center in Hayward, California.

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 Angelos, California, Sterling Heights, Michigan, Newark, New York, and East Windsor, Connecticut.

Item 3. Legal Proceedings.

In the ordinary course of its business, the Company is involved in various legal proceedings involving a variety of matters. The Company does not believe there are any pending legal proceedings that will have a material impact on the Company's financial position or results of operations.

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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, 2014	High	Low
2nd Quarter	$31.31	$5.06
3rd Quarter	$8.18	$4.97
4th Quarter	$7.80	$4.59

Holders
As of March 6, 2015, there were more than 300 beneficial owners of our Common Stock including 93 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 payment of dividends.
Equity Compensation Plan Information
The following table provides information, as of December 31, 2014, with respect to our equity compensation plans:

Plan Category	Number of securities to be issued upon exercise of outstanding options, warrants and rights (a)	Weighted-average exercise price of outstanding options, warrants and rights (b)	Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a)) (c)
Equity compensation plans approved by security holders [1]	1,356,325	$2.77	1,748,783
Equity compensation plans not approved by security holders	—	—	—
Total	1,356,325	$2.77	1,748,783

[1] 2006 Equity Incentive Plan approved by written consent of stockholders (see exhibit 10.24).
Recent Sales of Unregistered Securities
Not applicable.
Purchases of Equity Securities
Not applicable.
Item 6. Selected Financial Data.
Not applicable.

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

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 American DG Energy and EuroSite Power which are affiliated companies. 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 2,100 units. Many of these have been operating for almost 25 years.

In 2009, we created a majority-owned subsidiary Ilios to develop and distribute a line of ultra-high-efficiency heating products, including a high efficiency water heater. These products provide twice the efficiency of conventional commercial and industrial boilers (based upon management estimates) utilizing advanced thermodynamic principles. As of the date of this report, we own a 65.0% interest in Ilios.

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, may lend 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 half of our revenue was generated from long-term maintenance contracts, or service contracts, which provide us with a somewhat 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, and the three 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 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 16 weeks 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 Accounting Pronouncements

For recent accounting pronouncements see “Note 2 – Summary of significant accounting policies” to our consolidated financial statements.

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Critical Accounting Policies

For critical accounting policies see “Note 2 – Summary of significant accounting policies” to our 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,			
	2014		2013	
Revenues	100.0	%	100.0	%
Cost of Sales	66.9		68.3	
Gross Profit	33.1		31.7	
General and administrative	37.6		37.4	
Selling	9.3		9.0	
Research and development	5.4		6.9	
Aborted public offering costs	—		1.6	
Loss from operations	(19.2	)	(23.2	)
Total other expense, net	(0.9	)	(0.9	)
Consolidated net loss	(20.1	)	(24.1	)
Less: Loss attributable to the noncontrolling interest	0.6		2.3	
Net loss attributable to Tecogen Inc.	(19.5	)	(21.8	)

Year Ended December 31, 2014 Compared to Year Ended December 31, 2013

Revenues

Revenues in 2014 were $19,342,664 compared to $15,849,869 in 2013, an increase of $3,492,795 or 22.0%. This increase is the result of the increased sales of equipment being larger than the increase revenue in service and installations. Product revenues in 2014 were $8,625,034 compared to $6,346,050 in 2013, an increase of $2,278,984 or 35.9%. This increase from the year ended December 31, 2013 to 2014 resulted from an increase in cogeneration sales of $165,161 and an increase in chiller sales of $2,113,823. The increased sales efforts in 2013 yielded dramatic increase in chiller 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 only recognized upon shipment.

Revenues derived from our service centers including installation activities, in 2014 were $10,717,630 compared to $9,503,819 for the same period in 2013, an increase of $1,213,811 or 12.8%. Our service operation grows with the sales of cogeneration and chiller systems, since the majority of our product sales are accompanied by a service contracts 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 $3,279,505 in 2014 compared to $2,432,431 in 2013.

Cost of Sales

Cost of sales in 2014 was $12,943,600 compared to $10,819,741 in 2013, an increase of $2,123,859 or 19.6%. Our gross profit margin was 33.1% in 2014 compared to 31.7% in 2013, an increase of 4.4%. 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 service department's work with the factory to improve product service cycles, ease of maintenance, and component sourcing will continue to increase margins in the future.

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Operating Expenses

Operating expenses increased in 2014 to $10,102,381 compared to $8,700,232 in 2013, an increase of $1,402,149 or 16.1%. This increase was mostly due to increased general and administrative expense of $1,333,486. The increases were due to new compliance costs associated with being public, increased stock compensation expense, increased administrative head count and turn over in the Chief Financial Officer position as well as various other increased expenses. Selling expenses increased in 2014 to $1,796,268 compared to $1,423,587 in 2013, an increase of $372,681 or 26.2%. This increase was due to increased headcount in our sales and marketing departments, commissions, and travel costs. Research and development expenses decreased in 2014 to $1,041,483 compared to $1,086,989 in 2013, a decrease of $45,506 or 4.2%. The decrease is not a change in efforts or programs with research and development, and management continues efforts to improve the product's performance and cost.

Loss from Operations

Loss from operations for the year ended December 31, 2014 was $3,703,317 compared to $3,670,104 in 2013, an increase of $33,213 or 0.9%. The increase in the loss was due to the increase in operating expenses being larger than the increase in gross profit as discussed above.

Other Income (Expense), net

Other expense, net for the year ended December 31, 2014 was $167,635 compared to $137,107 for the same period in 2013. Other income (expense) includes interest income and other income of $9,710, net of interest expense on notes payable of $177,345 in 2014. For the same period in 2013, interest and other income was $3,958 and interest expense was $141,065.

Provision for Income Taxes

We did not record any benefit or provision for income taxes for the years ended December 31, 2014 and 2013, respectively. As of December 31, 2014 and 2013, the income tax benefits generated from our net losses have been fully reserved.

Noncontrolling Interest

The noncontrolling interest share in the losses of Ilios was $125,140 for the year ended December 31, 2014 compared to $357,722 for the same period in 2013, a decrease of $232,582 or 65.0%. The decrease in the losses were a direct result of increased sales and improving performance of the subsidiary. Management expects continued improvement with higher sales volume and margin improvement in the near future. Noncontrolling interest ownership percentage as of December 31, 2014 and 2013 was 35.0%.

Net loss

Net loss for the year ended December 31, 2014 was $3,745,812 compared to $3,449,489 for the same period in 2013. The increase in the loss of $296,323 was due to the increase in gross profit not offsetting the increase in operating expenses as discussed above.

Liquidity and Capital Resources

Consolidated working capital at December 31, 2014 was $7,217,583, compared to $5,565,789 at December 31, 2013, an increase of $1,651,794 or 29.7%. Included in working capital were cash and cash equivalents of $1,186,033 and $585,702 in restricted short-term investments at December 31, 2014, compared to $7,713,899 in cash and cash equivalents at December 31, 2013.

Cash used in operating activities for the years ended December 31, 2014 and 2013 was $5,126,816 and $3,384,019, respectively. Our accounts receivable balance increased to $4,750,437 at December 31, 2014 compared to $3,740,885 at December 31, 2013, an increase of $1,009,552 due to timing of billing, shipments, collections and change in the reserve. Unbilled revenues also increased by $50,514 in connection with turnkey projects. Our inventory increased to $4,090,221 as of December 31, 2014 compared to $3,343,793 as of December 31, 2013, a increase of $746,428. Prepaid expenses as of December 31, 2014 increased to $348,868 as compared to $340,013, an increase of $8,855. Accounts payable increased to $2,416,313 as of December 31, 2014 from $2,338,046 at December 31, 2013, an increase of $78,267. Accrued expenses decreased to $1,008,153 as of December 31, 2014 compared to $1,139,554 as of December 31, 2013, a decrease of $131,401. Interest payable, related party decreased from $198,450 as of December 31, 2013 to $0 as of December 31, 2014. Deferred revenues increased to $1,873,729 as of December 31,

2014 from $818,459 at December 31, 2013, an increase of $1,055,270. This significant increase in deferred revenues relate to the increased number of active turnkey projects.

Our related party balance was a net receivable of $600,251 as of December 31, 2014 and a net payable of $119,667 as of December 31, 2013. This change is due to receivables with related parties being larger than payable at year end and are not necessarily indicative of any significant change in operations.

During 2014 our cash flows used in investing activities were $942,841 and included purchases of short-term investments of $584,400, purchases of property and equipment of $223,574, expenditures related to intangible assets such as patents and product certifications of $141,959 offset by the proceeds from disposal of assets of $7,092.

Our cash flows used in financing activities were $458,209 for 2014, resulting from the proceeds of $2,340,194 from the sale of the Company's common stock in a private placement and a public offering, and the exercising of stock options of $161,265 offset by the repayment of notes payable of $2,950,000 and debt issuance cost of $9,668.

At December 31, 2014, our commitments included various leases for office and warehouse facilities of $4,860,155 to be paid over several years through 2024. The source of funds to fulfill these commitments will be provided either from cash and short-term investment balances, operations or through debt or equity financing.

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 in the winter and the majority of our chilling systems sales will be in the summer. Our cogeneration and chiller system sales are not generally affected by the seasons, although customer goals will be to have chillers installed and running in the spring. Our service team does experience higher demand in the warmer months when cooling is required. These units are generally shut down in the winter and started up again in the spring. This “busy season” for the service team generally runs from May through the end of September.

Off Balance Sheet Arrangements

On July 22, 2013, John Hatsopoulos, the Company’s Co-Chief Executive Officer, personally pledged to support a bank credit facility of $1,055,000 to support bank guarantees issued on certain of the Company's construction contracts. This credit facility was extended until July 22, 2015.

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-26 of this Annual Report on Form 10-K.

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

(a) Previous independent registered public accounting firm

On September 16, 2014, the Audit Committee of the Board of Directors of Tecogen Inc. (the “Registrant” or "Company"), notified McGladrey LLP ("McGladrey") that it was dismissing McGladrey as its independent registered public accounting firm effective immediately.

The reports of McGladrey on the financial statements of the Registrant for the year ended December 31, 2013 contained no adverse opinion or disclaimer of opinion and were not qualified or modified as to uncertainty, audit scope or accounting principle.

During the fiscal year ended December 31, 2013 and through September 15, 2014, there have been no:

(i) Disagreements with McGladrey on any matter of accounting principles or practices, financial statement disclosure or auditing scope or procedure, which disagreements, if not resolved to the satisfaction of McGladrey, would have caused them to make reference to the subject matter of the disagreement(s) in connection with its reports on the financial statements for such years; or

(ii) “Reportable events,” as that term is described in Item 304(a)(1)(v) of Regulation S-K.

(b) New independent registered public accounting firm

On September 16, 2014, the Audit Committee of the Board of Directors of the Registrant engaged Wolf & Company, P.C. (“Wolf”) as the Registrant's independent registered public accountant effective immediately. In deciding to select

Wolf, the Audit Committee reviewed auditor independence issues and existing commercial relationships with Wolf and concluded that Wolf has no commercial relationship with the Company that would impair its independence for the fiscal year ended December 31, 2014. During the Registrant's two most recent fiscal years and the subsequent interim period through October 15, 2014, the Registrant did not consult Wolf with respect to any of the matters or events listed in Regulation S-K Item 304(a)(2).

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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, 2014, 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 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 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 in accordance with the Exchange Act. 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, 2014.

At December 31, 2014, the Company employed 72 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 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. 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.

Item 9B. Other Information.

Not applicable.

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PART III
Item 10. Directors, Executive Officers and Corporate Governance.
The information called for by this item is incorporated by reference to our 2015 Proxy Statement.

Item 11. Executive Compensation.
The information called for by this item is incorporated by reference to our 2015 Proxy Statement.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters.
The information called for by this item is incorporated by reference to our 2015 Proxy Statement.

Item 13. Certain Relationships and Related Transactions, and Director Independence.
The information called for by this item is incorporated by reference to our 2015 Proxy Statement.

Item 14. Principal Accountant Fees and Services.
The information called for by this item is incorporated by reference to our 2015 Proxy Statement.

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) REPORTS OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRMS
INDEX TO FINANCIAL STATEMENTS AND FINANCIAL STATEMENTS SCHEDULES:
Consolidated Balance Sheets as of December 31, 2014 and December 31, 2013
Consolidated Statements of Operations for the years ended December 31, 2014 and December 31, 2013
Consolidated Statements of Stockholders' Equity for the years ended December 31, 2014 and December 31, 2013
Consolidated Statements of Cash Flows for the years ended December 31, 2014 and December 31, 2013
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.

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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)

By: /s/ John N. Hatsopoulos
Co-Chief Executive Officer
(Principal Executive Officer)

By: /s/ Benjamin Locke
Co-Chief Executive Officer
(Principal Executive Officer)

By: /s/ David A. Garrison
Chief Financial Officer, Treasurer and Secretary
(Principal Financial and Accounting Officer)

Dated: March 24, 2015

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 24, 2015
/s/ John N. Hatsopoulos John N. Hatsopoulos	Director and Co-Chief Executive Officer (Principal Executive Officer)	March 24, 2015
/s/ Benjamin Locke Benjamin Locke	Co-Chief Executive Officer (Principal Executive Officer)	March 24, 2015
/s/ David A. Garrison David A. Garrison	Chief Financial Officer, Treasurer and Secretary (Principal Financial and Accounting Officer)	March 24, 2015
/s/ Charles T. Maxwell Charles T. Maxwell	Director	March 24, 2015
/s/ Ahmed F. Ghoniem Ahmed F. Ghoniem	Director	March 24, 2015
/s/ Joseph E. Aoun Joseph E. Aoun	Director	March 24, 2015
/s/ Earl R. Lewis Earl R. Lewis	Director	March 24, 2015

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EXHIBIT INDEX

Exhibit Number	Description
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.
4.4+[a]	Indenture and Form of 6% Convertible Debenture Due 2004, dated September 24, 2001.
10.2[a]	Form of Tecogen Inc. Subscription Agreement for private placement of Common Stock.
10.3#[b]	Facilities and Support Services Agreement between American DG Energy Inc. and Tecogen Inc., dated July 1, 2012.
10.4[b]	First Amendment to the Facilities, Support Services, and Business Agreement between American DG Energy Inc. and Tecogen Inc., dated July 1, 2013.
10.5[b]	Second Amendment to the Facilities, Support Services, and Business Agreement between American DG Energy Inc. and Tecogen Inc., dated November 12, 2013.
10.6#[b]	General Motors LLC, Customer Care and Aftersales Agreement, dated November 15, 2011.
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.
10.9[a]	Form of Demand Promissory Note Agreement by Tecogen Inc. in favor of John N. Hatsopoulos.
10.10	Demand Promissory Note by Tecogen Inc., dated October 3, 2013, in favor of John N. Hatsopoulos (incorporated by reference to the registrant's Quarterly Report on Form 10-Q, for the quarter ended September 30, 2013).
10.11[a]	Form of Sales Representative Agreement.
10.12#[b]	Asset Purchase Agreement with Danotek, LLC.
10.13#[b]	Exclusive License Agreement between Tecogen Inc. and the Wisconsin Alumni Research Foundation, dated February 5, 2007.
10.14[a]	Grant Award Number PIR-08-022, dated July 2, 2009.
10.15#[b]	Sales Representative Agreement between American DG Energy Inc. and Ilios Dynamics, dated October 20, 2009.
10.16[b]	First Amendment to the Sales Representative Agreement, dated November 12, 2013, between Ilios Inc. and American DG Energy Inc.
10.17	Revolving Line of Credit Agreement, dated March 25, 2013, between Tecogen Inc. and John N. Hatsopoulos (incorporated by reference to the registrant's Current Report on Form 8-K, dated March 25, 2013).
10.18[b]	First Amendment to the Revolving Line of Credit Agreement, dated August 13, 2013, between Tecogen Inc. and John N. Hatsopoulos.
10.19[b]	Form of Common Stock Purchase Agreement.
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.
10.22[b]	Collective Bargaining Agreement, dated February 25, 2014, between Tecogen Inc. and International Union of Operating Engineers, Local 68, 68A, 68B.
10.23[b]	Revolving Line of Credit Agreement between Tecogen Inc. and John N. Hatsopoulos, dated March 26, 2014.
10.24*+	Tecogen Inc. 2006 Stock Incentive Plan, as amended on January 24, 2014 with stockholder approval on July 15, 2014.

14.1[a]	Code of Business Conduct and Ethics
21.1[b]	List of subsidiaries
23.1*	Consent of Wolf & Company, P.C.
23.2*	Consent of McGladrey LLP.
31.1*	Rule 13a-14(a) Certification of Co-Chief Executive Officer
31.2*	Rule 13a-14(a) Certification of Co-Chief Executive Officer

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Exhibit Number	Description
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)

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Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of
Tecogen Inc.

We have audited the accompanying consolidated balance sheet of Tecogen Inc. (the “Company”) as of December 31, 2014, and the related consolidated statements of operations, stockholders' equity, and cash flows for the year 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 audit.

We conducted our audit 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 also includes examining, on a test basis, evidence supporting the amounts and disclosures in the consolidated financial statements, assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audit provides 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, 2014, and the consolidated results of its operations and its cash flows for the year then ended in conformity with U.S. generally accepted accounting principles.

/s/ WOLF & COMPANY, P.C.
Boston, Massachusetts
March 24, 2015

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of
Tecogen Inc.

We have audited the accompanying consolidated balance sheet of Tecogen Inc. as of December 31, 2013, and the related consolidated statements of operations, stockholders' equity, and cash flows for the year 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 audit.

We conducted our audit 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. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. 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 also includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of Tecogen Inc. as of December 31, 2013, and the results of its operations and its cash flows for the year then ended, in conformity with U.S. generally accepted accounting principles.

/s/ McGladrey LLP
McGladrey LLP

Boston, Massachusetts
March 24, 2014

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CONSOLIDATED BALANCE SHEETS
As of December 31, 2014 and 2013

	2014	2013
ASSETS		
Current assets:		
Cash and cash equivalents	$1,186,033	$7,713,899
Short-term investments, restricted	585,702	—
Accounts receivable, net	4,750,437	3,740,885
Unbilled revenue	696,912	646,398
Inventory, net	4,090,221	3,343,793
Due from related party	600,251	—
Deferred financing costs	50,201	140,433
Prepaid and other current assets	348,868	340,013
Total current assets	12,308,625	15,925,421
Property, plant and equipment, net	658,421	638,026
Deferred financing costs, net of current portion	48,990	—
Intangible assets, net	1,011,300	953,327
Goodwill	40,870	40,870
Other assets	53,325	72,425
TOTAL ASSETS	$14,121,531	$17,630,069
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Demand notes payable and line of credit, related party	$—	$2,950,000
Senior convertible promissory note, related party	—	3,000,000
Accounts payable	2,416,313	2,338,046
Accrued expenses	1,008,153	1,139,554
Deferred revenue	1,666,576	613,915
Due to related party	—	119,667
Interest payable, related party	—	198,450
Total current liabilities	5,091,042	10,359,632
Long-term liabilities:		
Deferred revenue, net of current portion	207,153	204,544
Senior convertible promissory note, related party	3,000,000	—
Total liabilities	8,298,195	10,564,176
Commitments and contingencies (Note 8)	—	—
Stockholders' equity:		
Tecogen Inc. stockholders' equity:		
Common stock, $0.001 par value; 100,000,000 shares authorized; 15,905,881 and 15,155,200 issued and outstanding at December 31, 2014 and 2013, respectively	15,906	15,155
Additional paid-in capital	25,088,213	22,463,996
Accumulated deficit	(18,955,023)	(15,209,212)
Total Tecogen Inc. stockholders' equity	6,149,096	7,269,939

Noncontrolling interest	(325,760)	(204,046)
Total stockholders' equity	5,823,336	7,065,893
TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY	$14,121,531	$17,630,069

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

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CONSOLIDATED STATEMENTS OF OPERATIONS
For the Years Ended December 31, 2014 and 2013

	2014	2013
Revenues		
Products	$8,625,034	$6,346,050
Services	10,717,630	9,503,819
Total revenues	19,342,664	15,849,869
Cost of sales		
Products	6,347,583	4,709,767
Services	6,596,017	6,109,974
Total cost of sales	12,943,600	10,819,741
Gross profit	6,399,064	5,030,128
Operating expenses		
General and administrative	7,264,630	5,931,144
Selling	1,796,268	1,423,587
Research and development	1,041,483	1,086,989
Aborted public offering costs	—	258,512
Total operating expenses	10,102,381	8,700,232
Loss from operations	(3,703,317)	(3,670,104)
Other income (expense)		
Interest and other income	9,710	3,958
Interest expense	(177,345)	(141,065)
Total other expense, net	(167,635)	(137,107)
Loss before income taxes	(3,870,952)	(3,807,211)
Consolidated net loss	(3,870,952)	(3,807,211)
Less: Loss attributable to the noncontrolling interest	125,140	357,722
Net loss attributable to Tecogen Inc.	$(3,745,812)	$(3,449,489)
Net loss per share - basic and diluted	$(0.24)	$(0.26)
Weighted average shares outstanding - basic and diluted	15,607,897	13,385,155

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

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CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
For the Years Ended December 31, 2014 and 2013

	Tecogen Inc.					
	Common Stock Shares	Common Stock $.001 Par Value	Additional Paid-In Capital	Accumulated Deficit	Noncontrolling Interest	Total
Balance at December 31, 2012	13,611,974	$13,612	$16,360,821	$(11,759,723)	$168,325	$4,783,035
Sale of common stock	1,476,789	1,477	5,965,328	—	—	5,966,805
Conversion of related party convertible notes to common stock	75,806	76	90,891	—	—	90,967
Conversion of accrued interest on related party convertible notes to common stock	3,131	3	11,277	—	—	11,280
Exercise of stock options	25,000	25	2,975	—	—	3,000
Forfeitures of restricted stock grant	(37,500)	(38)	(112)	—	(200)	(350)
Stock based compensation expense	—	—	32,816	—	(14,449)	18,367
Net loss	—	—	—	(3,449,489)	(357,722)	(3,807,211)
Balance at December 31, 2013	15,155,200	$15,155	$22,463,996	$(15,209,212)	$(204,046)	$7,065,893
Sale of common stock	649,106	649	2,339,545	—	—	2,340,194
Exercise of stock options	101,575	102	161,163	—	—	161,265
Stock based compensation expense	—	—	123,510	—	3,426	126,936
Net loss	—	—	—	(3,745,812)	(125,140)	(3,870,952)
Balance at December 31, 2014	15,905,881	$15,906	$25,088,214	$(18,955,024)	$(325,760)	$5,823,336

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

TECOGEN INC.
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CONSOLIDATED STATEMENTS OF CASH FLOWS
For the Years Ended December 31, 2014 and 2013

	2014	2013
CASH FLOWS FROM OPERATING ACTIVITIES:		
Net loss	$(3,870,952)	$(3,807,211)
Adjustments to reconcile net loss to net cash provided by (used in) operating activities:		
Depreciation and amortization	278,865	256,459
Loss on Disposal of Asset	1,209	—
Provision for losses on accounts receivable	53,800	50,600
Provision (recovery) for inventory reserve	—	(32,000)
Stock-based compensation	126,936	18,367
Non-cash interest expense	50,910	—
Changes in operating assets (increase) decrease in:		
Short-term investments, restricted	(1,303)	(202)
Accounts receivable	(1,063,352)	(1,091,242)
Inventory	(746,428)	62,229
Unbilled revenue	(50,514)	(646,398)
Due from related party	(600,251)	55,837
Prepaid expenses and other current assets	(8,855)	62,833
Other assets	19,100	(33,000)
Changes in operating liabilities increase (decrease) in:		
Accounts payable	78,267	1,187,036
Accrued expenses	(131,401)	331,632
Deferred revenue	1,055,270	(2,186)
Interest payable, related party	(198,450)	83,560
Due to related party	(119,667)	119,667
Net cash used in operating activities	(5,126,816)	(3,384,019)
CASH FLOWS FROM INVESTING ACTIVITIES:		
Purchases of property and equipment	(223,574)	(202,700)
Disposal of property and equipment	7,092	—
Purchases of intangible assets	(141,959)	(397,950)
Cash paid for asset acquisition	—	(497,800)
Purchases of short-term investments	(584,400)	—
Maturities of short-term investments	—	182,061
Net cash used in investing activities	(942,841)	(916,389)
CASH FLOWS FROM FINANCING ACTIVITIES:		
Payments made on demand notes payable, related party	(2,950,000)	(37,500)
Proceeds from issuance of demand notes payable and line of credit, related party	—	1,650,000
Proceeds from sale of common stock, net of costs	2,340,194	5,966,805
Proceeds from exercise of stock options	161,265	3,000
Proceeds from issuance of senior convertible promissory note	—	3,000,000
Payments for debt issuance costs	(9,668)	(140,433)
Purchase of restricted stock	—	(350)
Net cash (used in) provided by financing activities	(458,209)	10,441,522
Net increase (decrease) in cash and cash equivalents	(6,527,866)	6,141,114
Cash and cash equivalents, beginning of the year	7,713,899	1,572,785
Cash and cash equivalents, end of the year	$1,186,033	$7,713,899

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

TECOGEN INC.
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Supplemental disclosure of cash flow information:		
Cash paid for interest	$324,885	$55,639
Non-cash investing and financing activities:		
Conversion of accrued convertible debenture interest into common stock	$—	$11,280
Conversion of related party notes to common stock	—	90,967
Settlement of shareholder receivable	$—	$—
Cash paid for asset acquisition:		
Inventory	$—	$17,400
Property and equipment	—	199,530
Intangible assets	—	240,000
Goodwill	—	40,870

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

TECOGEN INC.
Notes to Audited Consolidated Financial Statements for December 31, 2013 and 2014

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 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. As of December 31, 2014 the Company owns a 65.0% interest in Ilios and has consolidated Ilios into its financial statements. With the inclusion of unvested restricted stock awards, the Company owns 63.7% of Ilios.

The accompanying consolidated financial statements include the accounts of the Company and its majority owned subsidiary Ilios.

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.

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 (FASB). The FASB sets generally accepted accounting principles (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 (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.

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 ("FDIC") general deposit insurance limits. The amount on deposit at December 31, 2014 and 2013 which exceeded the $250,000 federally insured limit was approximately $1,272,500 and $7,410,000, 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 and cash equivalents.

There was no customer who represented more than 10% of revenues for the years ended December 31, 2014 and 2013. The Company has three hundred fifty-three customers who represented all of the revenues for the year ended December 31, 2014. Included in trade accounts receivable are amounts from one customer who represents 13% of the accounts receivable balance as of December 31, 2014 and another customer who represented 22% of the accounts receivable balance as of December 31, 2013.

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 certificates 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 are currently restricted as collateral for performance bonds associated with ongoing turnkey projects.

TECOGEN INC.
Notes to Audited Consolidated Financial Statements for December 31, 2013 and 2014

On October 26, 2011, the Company entered into an agreement with Digital Energy Corp., a customer of the Company, whereby the Company provided a letter of credit in the amount of $180,000, for the benefit of Digital Energy Corp., to satisfy a requirement of the New York Independent System Operator, Inc. A certificate of deposit for $180,000 secures the letter of credit. In exchange for providing this letter of credit, Digital Energy Corp. provided a promissory note to the Company for $180,000, with interest at 6%, payable in monthly installments of interest only. Principal would only be owed if the letter of credit was drawn upon and would become due and payable on the first anniversary date of the note. On February 19, 2013, this letter of credit was cancelled and the certificate of deposit was released from restriction and sold.

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, 2014 and 2013, the allowance for doubtful accounts was $50,000 and $103,800, 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 lives 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. 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 discussed in Note 14. The Company has recorded this transaction using the acquisition method of accounting. 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. The most significant factor to the value of the goodwill is the current value of the permanent magnet generator acquired as discussed in Note 14. These assets are a critical component to our top selling product line. The qualitative assessment of this value is significant to the future of the Company. Therefore, as of December 31, 2014, the Company determined that the fair value of the reporting unit exceeded its carrying value and therefore the second step was not necessary and no impairment was recognized.

Common Stock

The Company's common stock was split one-for-four in a reverse stock split effective July 22, 2013. The effect of this reverse stock split has been retroactively applied to per share data and common stock information.

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Impairment of long-lived assets

Long-lived assets, including intangible assets and property 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, 2014.

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.

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, 2014 and 2013 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 the United States of America. 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, 2014 and 2013:

	2014	2013
Products:		
Cogeneration	$5,364,810	$5,199,649
Chiller	3,260,224	1,146,401
Total Product Revenue	8,625,034	6,346,050
Services:		
Service contracts	7,438,125	7,071,388
Installations	3,279,505	2,432,431
Total Service Revenue	10,717,630	9,503,819
Total Revenue	$19,342,664	$15,849,869

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.

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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 2010, 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, 2014, 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. Infrequently, 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, 2014, bill and hold transactions of appproximately $1,020,000 in revenue compared to $0 in 2013.

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.

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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, 2014 and 2013, advertising expense was approximately $281,330 and $242,200, respectively.

Research and Development Costs

Research and development expenditures are expensed as incurred. Proceeds from certain grants and contracts with governmental agencies and their contractors to conduct research and development for new CHP technologies or to improve or enhance existing technology is recorded as an offset to the related research and development expenses. These grants and contracts are paid on a cost reimbursement basis provided in the agreed upon budget. Amounts received totaled $74,800 and $127,500 in fiscal years 2014 and 2013, respectively, which offset the Company's total research and development expenditures of approximately $1,116,283 and $1,214,489 for each of the years ended December 31, 2014 and 2013, respectively. In previous disclosures, research and development costs were included in general and administrative expenses. For the year ended December 31, 2013, these expenses were reclassed on the statement of operations for comparison purposes.

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. Since the Company was not publicly traded when the awards were issued, 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.

Reclassifications

Certain prior period balances have been reclassified to conform with current period presentation. As a result of a four-for-one reverse stock split which took place during 2013, a reclassification of $40,836 from common stock to

additional paid in capital was retroactively applied to the balances as of December 31, 2012. Research and development expense was separated from the general and administrative expense starting in 2014, for comparison purposes the expense was reclassed for the year ended December 31, 2013.

Note 3 – Loss per common share:

Basic and diluted loss per share for the years ended December 31, 2014 and 2013, respectively, was as follows:

	2014	2013
Loss available to stockholders	$(3,745,812)	$(3,449,489)
Weighted average shares outstanding - Basic and diluted	15,607,897	13,385,155
Basic and diluted loss per share	$(0.24)	$(0.26)
Anti-dilutive shares underlying stock options outstanding	1,356,325	1,148,000
Anti-dilutive convertible debentures	555,556	555,556

Note 4 – Inventory

Inventories at December 31, 2014 and 2013 consisted of the following.

	2014	2013
Gross raw materials	$4,348,786	$3,539,732
Less - reserves	(300,000)	(300,000)
Net raw materials	4,048,786	3,239,732
Work-in-process	22,250	104,061
Finished goods	19,185	—
	$4,090,221	$3,343,793

Note 5 – Intangible assets other than goodwill

The Company capitalized $68,638 and $171,224 of product certification costs during the years ended December 31, 2014 and 2013, 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 $73,321 and $226,726 of patent-related costs during the years ended December 31, 2014 and 2013, respectively. The Company also capitalized in 2013 $240,000 for developed technology in connection with an asset acquisition which is being amortized over its useful life of fifteen years. Intangible assets at December 31, 2014 and 2013 consist of the following:

	Product Certifications	Patents	Developed Technology	Total
Balance at December 31, 2014				
Intangible assets	$475,344	$514,930	240,000	$1,230,274
Less - accumulated amortization	(128,732)	(62,242)	(28,000)	(218,974)
	$346,612	$452,688	$212,000	$1,011,300
Balance at December 31, 2013				
Intangible assets	$406,706	$441,609	240,000	$1,088,315
Less - accumulated amortization	(83,405)	(39,583)	(12,000)	(134,988)
	$323,301	$402,026	$228,000	$953,327

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Amortization expense was $83,986 and $56,643 during the years ended December 31, 2014 and 2013, respectively. Estimated amortization expense at December 31, 2014 for each of the five succeeding years and thereafter are as follows:

2015	$92,389
2016	137,096
2017	137,096
2018	130,899
2019	114,248
Thereafter	399,572
	$1,011,300

Note 6 – Property and equipment

Property and equipment at December 31, 2014 and 2013 consisted of the following:

	Estimated Useful Life (in Years)	2014	2013
Machinery and equipment	5 - 7 years	$936,705	$773,894
Furniture and fixtures	5 years	99,346	79,612
Computer software	3 - 5 years	67,215	67,215
Leasehold improvements	*	427,791	397,158
		1,531,057	1,317,879
Less - accumulated depreciation and amortization		(872,636)	(679,853)
Net property, plant and equipment		$658,421	$638,026

* Lesser of estimated useful life of asset or lease term

Depreciation and amortization expense on property and equipment for the years ended December 31, 2014 and 2013 was $194,879 and $199,816, respectively.

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

Demand notes payable to related parties consist of various demand notes outstanding to stockholders totaling $0 and $1,750,000 at December 31, 2014 and 2013, respectively. The primary lender is John N. Hatsopoulos, the company's Chief Executive Officer, who holds $0 and $1,750,000 of the demand notes as of December 31, 2014 and 2013, respectively. The demand notes accrue interest annually at rates ranging from 5% to 6%. Unpaid principal and interest on the demand notes is due upon demand by the lender. On January 6, 2014, the Company repaid the then outstanding principal balance of $1,750,000 together with accrued interest of $175,311.

On March 25, 2013, the Company entered into a Revolving Line of Credit Agreement, or the Credit Agreement, with John N. Hatsopoulos, our Chief Executive Officer. Under the terms of the Credit Agreement, as amended on August 13, 2013, Mr. Hatsopoulos has agreed to lend the Company up to an aggregate of $1,500,000 from time to time, at the written request of the Company. Any amounts borrowed by the Company pursuant to the Credit Agreement will bear interest at the Bank Prime Rate as quoted from time to time in the Wall Street Journal plus 1.5% per year. Repayment of the principal amount borrowed pursuant to the Credit Agreement was due on March 1, 2014. In addition, the Company could have prepaid accrued interest, provided that prepayment was not made prior to January 1, 2014. The Credit Agreement terminated on March 1, 2014. As of December 31, 2013, the Company had borrowed $1,200,000 pursuant to the Credit Agreement. On January 6, 2014, the Company repaid the then outstanding principal balance of $1,200,000 together with accrued interest of $25,347.

On September 24, 2001, the Company entered into subscription agreements with three investors for the sale of convertible debentures in the aggregate principal amount of $330,000. The primary investors were George N. Hatsopoulos, a member of the board of directors, who subscribed for $200,000 of the debentures and John N. Hatsopoulos, the Company's Chief Executive Officer, who subscribed for $100,000 of the debentures. The debentures accrue interest at a rate of 6% per annum and are due six years from issuance date. The debentures are convertible, at the option of the holder, into a number of shares of Common Stock as determined by dividing the original principal amount plus accrued and unpaid interest by a conversion price of $1.20. On September 24, 2011 the remaining holders

of the Company's convertible debentures agreed to amend the terms of the debentures and extend the due date from September 24, 2011 to September 24, 2013.

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On October 18, 2013, the remaining holder of the debentures, George N. Hatsopoulos, converted the principal balance of $3,000,000 into 555,556 shares of the Company's common stock at a conversion price of $1.20 per share. In addition, Mr. Hatsopoulos requested that the accrued interest earned in 2012 in the amount of $6,913 be converted into 2,161 shares of the Company's common stock at a conversion price of $3.20 per share and that the accrued interest earned on or after January 1, 2013 in the amount of $4,367 be converted into 970 shares of the Company's common stock at a conversion price of $4.50 per share.

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. 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 Note is a senior unsecured 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 principal amount, if not converted, is due on the third anniversary of the Note, December 31, 2016. The Note 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 185.19 shares of our common stock per $1,000 principal amount of Note (equivalent to a conversion price of $5.40 per share) at the option of Michaelson. If at any time the common stock of the Company is (1) trading on a national securities exchange, (2) qualifies for unrestricted resale under federal securities laws and (3) 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 $5.40 per share.

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 $140,433 with a balance of $99,191 at December 31, 2014 are being amortized to interest expense over the term of the Note using the effective interest method. At December 31, 2014, there were 555,556 shares of common stock issuable upon conversion of the Company’s outstanding convertible debentures.

While, prior to this transaction, Michaelson was an unrelated party, due to their beneficial ownership percentage of 6.4% after this transaction, Michaelson is now considered a related party.

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, 2014 and 2013 amounted to $615,602 and $616,041, offset by $201,440 and $127,784 in rent paid by sub-lessees, to both related and unrelated parties, for a net amount of $414,162 and $488,257.

As of December 31, 2014, the future minimum lease payments receivable on subleases were $51,033.

The Company leased one passenger vehicle under a lease agreement expiring June 2018. Vehicle rent expense amounted to $1,839 during the year ended December 31, 2014.

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Future minimum lease payments under all non-cancelable operating leases as of December 31, 2014 consist of the following:

Years Ending December 31,	Amount
2015	$574,108
2016	524,159
2017	519,399
2018	500,272
2019	506,432
2020 and thereafter	2,235,785
Total	$4,860,155

Letters of Credit

On October 26, 2011, the Company entered into an agreement with Digital Energy Corp., a customer of the Company, whereby the Company provided a letter of credit in the amount of $180,000, for the benefit of Digital Energy Corp., to satisfy a requirement of the New York Independent System Operator, Inc. A certificate of deposit for $180,000 secures the letter of credit. In exchange for providing this letter of credit, Digital Energy Corp. provided a promissory note to the Company for $180,000, with interest at 6%, payable in monthly installments of interest only. Principal would only be owed if the letter of credit was drawn upon and would become due and payable on the first anniversary date of the note. On February 19, 2013, this letter of credit and certificate of deposit restriction were released.

As of December 31, 2014, $583,702 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 expires June 14, 2015. In addition, approximately $1,055,000 in letters of credit were required to collateralize performance bonds on several installation projects. This letter of credit is collateralized by an account owned by John N. Hatsopoulos and expires July 22, 2015. In each case, a performance bond has been furnished on the project and would be drawn upon only in the event that Tecogen fails to complete the project in accordance with the contract.

Legal Proceedings

From time to time the Company may be involved in various claims and other legal proceedings which arise in the normal course of business. Such matters are subject to many uncertainties and outcomes that are not predictable. Based on the information available to the Company and after discussions with legal counsel, the Company does not believe any such proceedings will have a material adverse effect on the business, results of operations, financial position or liquidity.

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, 2012	$90,200
Warranty provision for units sold	179,841
Costs of warranty incurred	(175,041)
Warranty reserve, December 31, 2013	95,000
Warranty provision for units sold	207,583
Costs of warranty incurred	(155,583)
Warranty reserve, December 31, 2014	$147,000

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Note 10 – Stockholders' equity

Common Stock

In 2014 and 2013 the Company raised additional funds through the offering and private placements of common stock to a limited number of accredited investors. In connection with the 2014 public offering, the Company sold an aggregate of 647,706 shares of common stock at a purchase price of $4.75 per share. In connection with this public offering the Company incurred commissions, legal fees and various other costs of $742,710 which were offset against the proceeds in additional paid in capital, resulting in net cash proceeds of $2,333,894. In connection with the 2014 and 2013 private placements the Company sold an aggregate of 1,400 and 1,476,789 shares of common stock at a purchase price $4.50 per share, resulting in net cash proceeds of $6,300 and $5,966,805.

The holders of Common Stock have the right to vote their interest on a per share basis. At December 31, 2014 and 2013 there were 15,905,881 and 15,155,200 shares of Common Stock outstanding, respectively.

Preferred Stock

On February 13, 2013, the Company authorized preferred stock of 10 million shares, at December 31, 2014 none of these shares were issued or outstanding.

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, 2014 (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, 2014 and 2013 was 1,748,783 and 58,683, respectively.

In 2013, the Company granted nonqualified options to purchase an aggregate of 37,500 and 39,000 shares of common stock at $3.20 and $4.50 per share, respectively to certain employees. These options have a vesting schedule of four years and expire in ten years. The fair value of the options issued in 2013 was $80,952. The weighted-average grant date fair value of stock options granted during 2013 was $0.75 and $1.35 per option.

In 2014, the Company granted nonqualified options to purchase an aggregate of 318,325 shares of common stock for between $4.50 and $5.39 per share, respectively to certain employees, a director, and a consultant. These options have a vesting schedule of four years and expire in ten years. One of the grants for 100,000 shares had vesting terms of one year and only vest if the Company achieves positive earnings before interest taxes depreciation and amortization adjusted for stock compensation. The fair value of the options issued in 2014 was $577,029. The weighted-average grant date fair value of stock options granted during 2014 was $1.89 per option.

Stock option activity for the year ended December 31, 2014 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, 2013	1,148,000	$1.20-$4.50	$2.13	5.80 years	$2,721,100
Granted	318,325	$4.50-$5.39	4.85		
Exercised	(101,575)	$1.20-$2.60	1.59		
Canceled and forfeited	(8,425)	$0.12-$4.50	3.52		
Expired	—	—	—		
Outstanding, December 31, 2014	1,356,325	$1.20-$5.39	$2.77	5.12 years	$3,618,935
Exercisable, December 31, 2014	863,552		$2.65		$2,287,760
	1,356,325		$2.77		$3,618,935

Vested and expected to vest, December 31, 2014

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The Company does not expect any forfeitures and the table above represents all stock options expected to vest. 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 2014 and 2013 are as follows:

Stock option awards:	2014	2013
Expected life	6.25 years	5.63 years
Risk-free interest rate	1.51%	1.34%
Expected volatility	22.7%-32.3%	26.5%-36.1%

The Company has granted restricted stock awards to its employees and directors. The performance based awards have vesting schedules ranging from 100% 90 days after an initial public offering (IPO) up to 100% one year after an IPO.

Restricted stock activity for the years ended December 31, 2014 was as follows:

	Number of Restricted Stock	Weighted Average Grant Date Fair Value
Unvested, December 31, 2013	361,570	$1.31
Granted	—	—
Vested	(205,720)	1.36
Forfeited	7,500	2.60
Unvested, December 31, 2014	163,350	$1.31

During the years ended December 31, 2014 and 2013, the Company recognized stock-based compensation of $117,138 and $59,678, 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, 2014 and 2013, the total compensation cost related to unvested restricted stock awards and stock option awards not yet recognized is $156,179 and $124,845, respectively. This amount will be recognized over a weighted average period of 0.56 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.

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 Plan. The options are not transferable except by will or domestic relations order. The option price per share under the Plan cannot be less than the fair market value of the underlying shares on the date of the grant.

During the years ended December 31, 2014 and 2013 Ilios recognized stock-based compensation of $9,798 and $(41,311), related to the forfeiture and issuance of stock options and restricted stock, respectively. No tax benefit was recognized related to the stock-based compensation recorded during the year. At December 31, 2014 and 2013 there were 310,000 unvested shares of restricted stock outstanding. At December 31, 2014 and 2013 the total compensation cost related to unvested restricted stock awards and stock option awards not yet recognized is $14,478 and $9,004, respectively. This amount will be recognized over the weighted average period of 1.24 years.

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Stock option activity relating to Ilios for the years ended December 31, 2014 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, 2013	575,000	$0.10-$0.50	$0.29	6.44 years	$120,000
Granted	100,000	0.50	0.50		
Exercised	—	—	—		
Canceled and forfeited	—	—	—		
Expired	—	—	—		
Outstanding, December 31, 2014	675,000	$0.10-$0.50	$0.32	6.56 years	$120,000
Exercisable, December 31, 2014	193,750		$0.50		$—
Vested and expected to vest, December 31, 2014	675,000		$0.32		$120,000

Ilios does not expect any forfeitures and the table above represents all stock options expected to vest. Ilios uses the Black-Scholes option pricing model to determine the fair value of stock options granted. Expected volatility was calculated based on the average volatility of comparable publicly traded companies, the expected life of the options was calculated using the simplified method, and 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 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.

For the Ilios awards noting none made in 2013, the weighted average assumptions used in the Black-Scholes option pricing model for options granted in 2014 are as follows:

Stock option awards:	
Expected life	6.25 years
Risk-free interest rate	1.65%
Expected volatility	35.2%

Ilios has granted restricted stock awards to its employees and directors. The awards have only service conditions and carry vesting schedules ranging from 100% 90 days after an IPO up to 100% one year after an IPO.

Restricted stock activity for the Ilios awards, for the years ended December 31, 2014 was as follows:

	Number of Restricted Stock	Weighted Average Grant Date Fair Value
Unvested, December 31, 2013	310,000	$0.10
Granted	—	—
Vested	—	—
Forfeited	—	—
Unvested, December 31, 2014	310,000	$0.10

Note 11 – Noncontrolling interests

As of December 31, 2014, Tecogen owns 9,500,000 shares of 14,610,000 outstanding shares in Ilios or 65.0%. If the 310,000 restricted Ilios shares vest, the net result will decrease Tecogen’s ownership interest to 63.7%.

Note 12 – 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 4.5% of each participant’s salary. The Company contributed approximately $144,568 and $125,680 to the Plan for the years ended December 31, 2014 and 2013.

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Note 13 – Related party transactions

The Company has two affiliated companies, namely American DG Energy, and EuroSite Power. These companies are affiliates because several of the major stockholders of those companies, have a significant ownership position in the Company. The Company does not own any shares of American DG Energy, and EuroSite Power.

American DG Energy, and EuroSite Power are affiliated companies by virtue of common ownership. The common stockholders include:

- John N. Hatsopoulos, the Company's Chief Executive Officer who is also: (a) the Chief Executive Officer and a director of American DG Energy and holds 19.4% of American DG Energy's common stock; (b) the Chairman of EuroSite Power and holds 4.7% of EuroSite Power's common stock; and (c) a director of Ilios and holds 7.2% of Ilios' common stock.
- Dr. George N. Hatsopoulos, who is John N. Hatsopoulos' brother, and is also: (a) an investor of American DG Energy and holds 13.0% of American DG Energy's common stock; (b) an investor in Eurosite Power and holds 0.7% of EuroSite Power's common stock; (c) an investor in Ilios and holds 3.1% of Ilios' common stock; and (d) was a director of Tecogen until June 25, 2014.

Additionally, the following related persons had or may have a direct or indirect material interest in our transactions with our affiliated companies:

- Barry J. Sanders, who until February 6, 2015 was: (a) the President and Chief Operating Officer of American DG Energy, (b) the Chief Executive Officer and a director of EuroSite Power and (c) the Chairman of Ilios.

American DG Energy has sales representation rights to 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, 2014 and 2013 amounted to $1,316,294 and $758,930, respectively.

On October 20, 2009, American DG Energy, in the ordinary course of its business, signed a Sales Representative Agreement with Ilios to promote, sell and service the Ilios high-efficiency heating products, such as the high efficiency water heater, in the marketing territory of the New England States, including Connecticut, Rhode Island, Massachusetts, New Hampshire, Vermont, and Maine. The marketing territory also includes all of the nations in the European Union. The initial term of this Agreement is for five years, after which it may be renewed for successive one-year terms upon mutual written agreement.

On September 24, 2001, the Company entered into subscription agreements with investors for the sale of convertible debentures. The primary investors were George N. Hatsopoulos, who subscribed for $200,000 of the debentures, and the John N. Hatsopoulos 1989 Family Trust for the benefit of Mr. Hatsopoulos' adult children, who subscribed for a total amount of $100,000 of the debentures. The debentures accrue interest at a rate of 6% per annum and are due on September 24, 2007. The debentures are convertible, at the option of George N. Hatsopoulos, and the John N. Hatsopoulos 1989 Family Trust for the benefit of Mr. Hatsopoulos' adult children, into shares of Common Stock at a conversion price of $1.20 per share.

On October 18, 2013, the remaining holder of the debentures, George N. Hatsopoulos, converted the principal balance of $3,000,000 into 555,556 shares of the Company's common stock at a conversion price of $1.20 per share. In addition, Mr. Hatsopoulos requested that the accrued interest earned in 2012 in the amount of $6,913 be converted into 2,161 shares of the Company's common stock at a conversion price of $3.20 per share and that the accrued interest earned on or after January 1, 2013 in the amount of $4,367 be converted into 970 shares of the Company's common stock at a conversion price of $4.50 per share.

The Company had lines of credit with John N. Hatsopoulos, the Co-Chief Executive Officer. Details of these transactions can be found in Note 7.

On December 23, 2013, the Company entered into a Senior Convertible Promissory Note (the "Note") with Michaelson Capital Special Finance Fund LP, ("Michaelson"). Details of these 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.

On January 1, 2006 the Company signed a Facilities and Support Services Agreement with American DG Energy for a period of one year, renewable annually, on January 1st, by mutual agreement. That agreement was amended July 1, 2012. Under this agreement, the Company provides American DG Energy with certain office and business support services and also provides pricing based on a volume discount depending on the level of American DG Energy purchases of cogeneration and chiller products. For certain sites, American DG Energy hires the Company to service its chiller and cogeneration products. The Company also provides office space and certain utilities to American DG Energy based on a monthly rate set at the beginning of each year. Also, under this agreement, American DG Energy has sales representation rights to the Company's products and services in New England.

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The Company subleases portions of its corporate offices and manufacturing facility to sub-tenants under annual sublease agreements. For the years ended December 31, 2014 and 2013, the Company received $127,298 and $113,784, respectively, from American DG Energy and Levitronix LLC. In addition, for the years ended December 31, 2014 and 2013 the Company received from the same companies, $61,143 and $90,348, respectively, to offset common operating expenses incurred in the administration and maintenance of its corporate office and warehouse facility. In addition, Tecogen pays certain operating expenses, including benefits and insurance, on behalf of American DG Energy. Tecogen was reimbursed for these costs. As of December 31, 2014 and 2013, the total amount due from or (to) American DG Energy was $600,251 and $(119,667), respectively.

Note 14 - Asset acquisition

On January 9, 2013 the Company purchased certain assets, both tangible and intangible, required to manufacture the generator used in its InVerde product from Danotek Motion Technologies. The aggregate consideration paid in cash by the Company was $497,800, of which $17,400 represents the fair value of inventory and $199,530 represents the estimated fair value of property, plant and equipment consisting of machinery and equipment, computer equipment, and tooling, which is depreciated over useful lives ranging from 5 to 8.5 years. The fair value of the property, plant and equipment was estimated utilizing a replacement cost method. In addition, $240,000 of the purchase consideration represents the fair value of identified intangible assets using a relief from royalty method with a useful life of fifteen years. The balance of $40,870 is included in goodwill in the accompanying consolidated balance sheet, which consists largely of economies of scale expected from combining the manufacturing of the generator into Tecogen's operations. Acquisition related costs were not material to the financial statements and were expensed as incurred to general and administrative expenses.

This transaction was accounted for under the purchase method of accounting in accordance with FASB ASC Topic 805, Business Combinations. Under the purchase method of accounting, the total purchase price has been allocated to the net tangible and intangible assets acquired based on estimates of their fair values by the Company's management. There is one reporting unit within the Company.

Under the purchase method of accounting, an acquisition is recorded as of the closing date, reflecting the purchased assets, at their acquisition date fair values. Intangible assets that are identifiable are recognized separately from goodwill which is measured and recognized as the excess of the fair value, as a whole, over the net amount of the recognized identifiable assets acquired.

The purchase price has been allocated as follows:

Inventory	$17,400
Machinery and equipment	171,910
Computer equipment	22,070
Tooling	5,550
Developed technology	240,000
Goodwill	40,870
Total purchase consideration	$497,800

Note 15 – Income taxes

A reconciliation of the federal statutory income tax provision to the Company's actual provision for the years ended December 31, 2014 and 2013 is as follows:

	2014	2013
Benefit at federal statutory tax rate	$1,319,500	$1,280,000
Unbenefited operating losses	(1,319,500)	(1,280,000)
Income tax provision	$—	$—

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The components of net deferred tax assets recognized in the accompanying consolidated balance sheets at December 31, 2014 and 2013 are as follows:

	2014	2013
Net operating loss carryforwards	$6,356,000	$4,850,000
Accrued expenses and other	1,051,000	598,000
Accounts receivable	19,000	40,000
Inventory	207,000	117,000
Property, plant and equipment	138,000	155,000
Deferred tax assets	7,771,000	5,760,000
Valuation allowance	(7,771,000)	(5,760,000)
Deferred tax assets, net	$—	$—

At December 31, 2014, the Company has approximately $15,990,000 of Federal Loss Carryforwards that expire beginning in the year 2021 through 2034. In addition, the Company has varying amounts of state net operating losses, expiring at various dates starting 2015 through 2034. The Federal net operating losses include approximately $3,300,000 attributable to the Company's majority owned subsidiary, which can only be used against income of that entity.

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, 2014 and 2013.

Note 16 – Subsequent events

On January 28, 2015, the Company sold 210,526 shares of common stock in a private placement for $4.75 a share for a total of $1,000,000. The shares are subject to the rule 144 in regards to holding requirements and were not registered.

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.