
UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549
FORM 10-K

(Mark One)

- ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the fiscal year ended December 31, 2019
- TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT
For the transition period from _____ to _____
Commission file number: 1-34392

Plug Power Inc.

(Exact Name of Registrant as Specified in Its Charter)

Delaware
(State or Other Jurisdiction
of Incorporation or Organization)

22-3672377
(I.R.S. Identification
Number)

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

Title of Each Class	Trading Symbol(s)	Name of Each Exchange on Which Registered
Common Stock, par value \$.01 per share	PLUG	The NASDAQ Capital Market

968 ALBANY SHAKER ROAD, LATHAM, NEW YORK 12110

(Address of Principal Executive Offices, including Zip Code)

(518) 782-7700

(Registrant's telephone number, including area code)

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

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes No

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Sections 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted 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 such files). Yes No

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer Accelerated Filer Non-accelerated filer Smaller reporting company Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

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

The aggregate market value of the registrant's voting and non-voting common stock held by non-affiliates of the registrant was approximately \$521,797,028 based on the last reported sale of the common stock on The Nasdaq Capital Market on June 28, 2019, the last business day of the registrant's most recently completed second fiscal quarter.

As of March 9, 2020, 321,289,882 shares of the registrant's common stock were issued and outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Certain information contained in Plug Power Inc.'s Proxy Statement relating to its 2020 Annual Meeting of Stockholders is incorporated by reference in Items 10, 11, 12, 13 and 14 of Part III. Plug Power Inc. intends to file such Proxy Statement with the Securities and Exchange Commission not later than 120 days after the end of its fiscal year ended December 31, 2019.

INDEX TO FORM 10-K

	<u>Page</u>	
<u>PART I</u>		
Item 1.	Business	5
Item 1A.	Risk Factors	9
Item 1B.	Unresolved Staff Comments	24
Item 2.	Properties	24
Item 3.	Legal Proceedings	24
Item 4.	Mine Safety Disclosures	24
<u>PART II</u>		
Item 5.	Market for Registrant’s Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities	25
Item 6.	Selected Financial Data	26
Item 7.	Management’s Discussion and Analysis of Financial Condition and Results of Operations	27
Item 7A.	Quantitative and Qualitative Disclosures About Market Risk	48
Item 8.	Financial Statements and Supplementary Data	49
Item 9.	Changes in and Disagreements with Accountants on Accounting and Financial Disclosure	49
Item 9A.	Controls and Procedures	49
Item 9B.	Other Information	50
<u>PART III</u>		
Item 10.	Directors, Executive Officers and Corporate Governance	50
Item 11.	Executive Compensation	50
Item 12.	Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters	51
Item 13.	Certain Relationships and Related Transactions, and Director Independence	51
Item 14.	Principal Accounting Fees and Services	51
<u>PART IV</u>		
Item 15.	Exhibits, Financial Statement Schedules	52
Item 16.	Form 10-K Summary	56

PART I

Forward-Looking Statements

The following discussion should be read in conjunction with our consolidated financial statements and notes thereto included within this Annual Report on Form 10-K. In addition to historical information, this Annual Report on Form 10-K and the following discussion contain statements that are not historical facts and are considered forward-looking within the meaning of Section 27A of the Securities Act of 1933, as amended, or the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act. These forward-looking statements contain projections of our future results of operations or of our financial position or state other forward-looking information. In some cases you can identify these statements by forward-looking words such as “anticipate,” “believe,” “could,” “continue,” “estimate,” “expect,” “intend,” “may,” “should,” “will,” “would,” “plan,” “projected” or the negative of such words or other similar words or phrases which are predictions of or indicate future events or trends and which do not relate solely to historical matters. We believe that it is important to communicate our future expectations to our investors. However, forward-looking statements involve numerous risks and uncertainties and depend on assumptions, data or methods which may be incorrect or imprecise. There may be events in the future that we are not able to accurately predict or control and that may cause our actual results to differ materially from the expectations we describe in our forward-looking statements. Investors are cautioned not to unduly rely on forward-looking statements. Actual results may differ materially from those discussed as a result of various factors, including, but not limited to:

- the risk that we continue to incur losses and might never achieve or maintain profitability;
- the risk that we will need to raise additional capital to fund our operations and such capital may not be available to us;
- the risk of dilution to our stockholders and/or stock price should we need to raise additional capital;
- the risk that our lack of extensive experience in manufacturing and marketing products may impact our ability to manufacture and market products on a profitable and large-scale commercial basis;
- the risk that unit orders may not ship, be installed and/or converted to revenue, in whole or in part;
- the risk that a loss of one or more of our major customers, or if one of our major customers delays payment of or is unable to pay its receivables, a material adverse effect could result on our financial condition;
- the risk that a sale of a significant number of shares of stock could depress the market price of our common stock;
- the risk that our convertible senior notes, if settled in cash, could have a material effect on our financial results;
- the risk that our convertible note hedges may affect the value of our convertible senior notes and our common stock;
- the risk that negative publicity related to our business or stock could result in a negative impact on our stock value and profitability;
- the risk of potential losses related to any product liability claims or contract disputes;
- the risk of loss related to an inability to maintain an effective system of internal controls;
- our ability to attract and maintain key personnel;
- the risks related to the use of flammable fuels in our products;
- the risk that pending orders may not convert to purchase orders, in whole or in part;
- the cost and timing of developing, marketing and selling our products;
- the risks of delays in or not completing our product development goals;
- our ability to obtain financing arrangements to support the sale or leasing of our products and services to customers;
- our ability to achieve the forecasted gross margin on the sale of our products;
- the cost and availability of fuel and fueling infrastructures for our products;
- the risks, liabilities, and costs related to environmental, health and safety matters;
- the risk of elimination of government subsidies and economic incentives for alternative energy products;
- market acceptance of our products and services, including GenDrive, GenSure and GenKey systems;
- our ability to establish and maintain relationships with third parties with respect to product development, manufacturing, distribution and servicing, and the supply of key product components;
- the cost and availability of components and parts for our products;
- the risk that possible new tariffs could have a material adverse effect on our business;
- our ability to develop commercially viable products;
- our ability to reduce product and manufacturing costs;



[Table of Contents](#)

- our ability to successfully market, distribute and service our products and services internationally;
- our ability to improve system reliability for our products;
- competitive factors, such as price competition and competition from other traditional and alternative energy companies;
- our ability to protect our intellectual property;
- the risk of dependency on information technology on our operations and the failure of such technology;
- the cost of complying with current and future federal, state and international governmental regulations;
- our subjectivity to legal proceedings and legal compliance;
- the risks associated with past and potential future acquisitions; and
- the volatility of our stock price.

The risks included here are not exhaustive, and additional factors could adversely affect our business and financial performance, including factors and risks included in other sections of this Annual Report on Form 10-K, including under Part I, Item 1A, Risk Factors. Moreover, we operate in a very competitive and rapidly changing environment. New risk factors emerge from time to time and it is not possible for management to predict all such risk factors, nor can we assess the impact of all such risk factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements. While forward-looking statements reflect our good faith beliefs, they are not guarantees of future performance. These forward-looking statements speak only as of the date on which the statements were made. Except as may be required by applicable law, we do not undertake or intend to update any forward-looking statements after the date of this Annual Report on Form 10-K.

References in this Annual Report on Form 10-K to “Plug Power,” the “Company,” “we,” “our” or “us” refer to Plug Power Inc., including as the context requires, its subsidiaries.

Item 1. Business

Background

As a leading provider of comprehensive hydrogen fuel cell turnkey solutions, Plug Power is seeking to build a green hydrogen economy. The Company is focused on hydrogen and fuel cell systems that are used to power electric motors primarily in the electric mobility and stationary power markets, given the ongoing paradigm shift in the power, energy, and transportation industries to address climate change, energy security, and meet sustainability goals. Plug Power created the first commercially viable market for hydrogen fuel cell, or the HFC technology. As a result, the Company has deployed over 30,000 fuel cell systems, and has become the largest buyer of liquid hydrogen, having built and operated a hydrogen network across North America.

We are focused on proton exchange membrane, or PEM, fuel cell and fuel processing technologies, fuel cell/battery hybrid technologies, and associated hydrogen storage and dispensing infrastructure from which multiple products are available. A fuel cell is an electrochemical device that combines hydrogen and oxygen to produce electricity and heat without combustion. Hydrogen is derived from hydrocarbon fuels such as liquid petroleum gas, or LPG, natural gas, propane, methanol, ethanol, gasoline or biofuels. Plug Power develops complete hydrogen generation, delivery, storage and refueling solutions for customer locations. Currently, the Company obtains the majority of its hydrogen by purchasing it from fuel suppliers for resale to customers.

We provide and continue to develop commercially-viable hydrogen and fuel cell solutions for industrial mobility applications (including electric forklifts and electric industrial vehicles) at multi-shift high volume manufacturing and high throughput distribution sites where we believe our products and services provide a unique combination of productivity, flexibility and environmental benefits. Additionally, we manufacture and sell fuel cell products to replace batteries and diesel generators in stationary backup power applications. These products have proven valuable with telecommunications, transportation and utility customers as robust, reliable and sustainable power solutions.

We were organized as a corporation in the State of Delaware on June 27, 1997.

Unless the context indicates otherwise, the terms “Company,” “Plug Power,” “we,” “our” or “us” as used herein refers to Plug Power Inc. and its subsidiaries.

Business Strategy

Plug Power is a leading provider of cost-effective, reliable, clean hydrogen and zero-emission fuel cell solutions. We are committed to developing effective, economical and reliable fuel cell related products, systems and services allowing users to operate sustainably, consistently and efficiently. Building on our substantial fuel cell application and product integration experience, we are focused on generating strong relationships with customers who value high-asset utilization, increased reliability, efficiency and zero-emission power solution.

Our business strategy leverages our unique fuel cell application and integration knowledge to identify high-asset utilization markets in an increasingly electrified world, for which we can design and develop innovative systems and customer solutions that provide superior value, ease-of-use and environmentally-friendly design.

Our primary marketing strategy is to focus our resources on high growth markets such as on-road/e-mobility applications as well as material handling, supply chain/logistics and stationary power around the world. Through established customer relationships, we have proven ourselves as a trusted partner with a reliable hydrogen and fuel cell solution. Plug Power’s vertically integrated GenKey solution ties together all critical elements to power, fuel, and provides service aftermarket support to customers such as Amazon, The Home Depot, The Southern Company, BMW, Carrefour, and Walmart. We have made significant progress in penetrating the material handling market, supported through the deployment of over 30,000 GenDrive units into commercial applications. We believe we have developed reliable products which allow the end customers to eliminate incumbent lead-acid battery power sources from their operations and realize their sustainability objectives through adoption of zero-emission clean energy alternatives. In addition, we have deployed our GenKey hydrogen and fuel cell solution to multiple customer sites.

Our operating strategy also includes the following objectives: decrease product and service costs, expand system reliability, and improve service and post-sales support experience.

[Table of Contents](#)

Our longer-term objectives are to deliver economic, social, and environmental benefits in terms of reliable, clean, cost-effective fuel cell solutions and, ultimately, productivity.

We believe continued investment in research and development is critical to the development and enhancement of innovative products, technologies and services. In addition to evolving our direct hydrogen fueled systems, we continue to capitalize on our investment and expertise in power electronics, controls, and software design.

We continue to develop and monitor future fuel cell solutions that align with our evolving product roadmap. By leveraging our current GenDrive architecture, we are evaluating adjacent markets such as ProGen electric vehicles, ground support equipment and fuel cell vehicles.

Business Organization

We manage our business as a single operating segment, emphasizing shared learning across end-user applications and common supplier/vendor relationships.

Products and Services

Plug Power is facilitating the paradigm shift to an increasingly electrified world by innovating cutting-edge hydrogen and fuel cell solutions. In our core business, we provide and continue to develop commercially-viable hydrogen and fuel cell product solutions to replace lead-acid batteries in electric material handling vehicles and industrial trucks for some of the world's largest retail-distribution and manufacturing businesses. We are focusing our efforts on industrial mobility applications, including electric forklifts and electric industrial vehicles, at multi-shift high volume manufacturing and high throughput distribution sites where we believe our products and services provide a unique combination of productivity, flexibility and environmental benefits. Additionally, we manufacture and sell fuel cell products to replace batteries and diesel generators in stationary backup power applications. These products have proven valuable with telecommunications, transportation and utility customers as robust, reliable and sustainable power solutions.

Our current products and services include:

GenDrive: GenDrive is our hydrogen fueled PEM fuel cell system providing power to material handling electric vehicles, including class 1, 2, 3 and 6 electric forklifts and ground support equipment;

GenFuel: GenFuel is our hydrogen fueling delivery, generation, storage and dispensing system;

GenCare: GenCare is our ongoing 'internet of things'-based maintenance and on-site service program for GenDrive fuel cell systems, GenSure fuel cell systems, GenFuel hydrogen storage and dispensing products and ProGen fuel cell engines;

GenSure: GenSure is our stationary fuel cell solution providing scalable, modular PEM fuel cell power to support the backup and grid-support power requirements of the telecommunications, transportation, and utility sectors;

GenKey: GenKey is our vertically integrated "turn-key" solution combining either GenDrive or GenSure fuel cell power with GenFuel fuel and GenCare aftermarket service, offering complete simplicity to customers transitioning to fuel cell power; and

ProGen: ProGen is our fuel cell stack and engine technology currently used globally in mobility and stationary fuel cell systems, and as engines in electric delivery vans.

We provide our products worldwide through our direct product sales force, and by leveraging relationships with original equipment manufacturers, and their dealer networks. We manufacture our commercially-viable products in Latham, NY and Spokane, WA.

To promote fuel cell adoption and maintain post-sale customer satisfaction, we offer a range of service and support options through extended maintenance contracts. Additionally, customers may waive our service option, and choose to service their systems independently. Substantially all of our fuel cells sold in recent years were bundled with maintenance contracts.

Markets/Geography & Order Status

The Company's products and services predominantly serve the North American and European material handling markets, and primarily support large to mid-sized fleet, multi-shift operations in high-volume manufacturing and high-throughput distribution centers. Based on recent market experience, it appears there may be some seasonality to sales stemming from varied customer appropriation cycles; however, we believe these market factors will continue to evolve and the Company's insight to these trends will improve with continued commercial success and time.

Orders for the Company's products and services approximated \$481.5 million and \$225.0 million for the years ended December 31, 2019 and 2018, respectively. The Company's backlog for products and services approximated \$797.4 million and \$540.0 million as of December 31, 2019 and 2018, respectively. The Company's backlog at any given time is comprised of fuel cells, hydrogen installations, maintenance services, and hydrogen fuel deliveries. The specific elements of the backlog will vary in terms of timing of delivery and can vary between 90 days to 10 years, with fuel cells and hydrogen installations being delivered near term and maintenance services and hydrogen fuel deliveries being delivered over a longer period of time. We expect that approximately 36.5% of our backlog will be filled during our 2020 fiscal year. Historically, shipments made against product orders generally occur between ninety days and twenty-four months from the date of acceptance of the order.

For the year ended December 31, 2019, 2018 and 2017, respectively 49.6%, 66.7% and 71.8% of our total consolidated revenues were associated primarily with two customers. For purposes of assigning a customer to a sale/leaseback transaction completed with a financial institution, the Company considers the end user of the assets to be the ultimate customer. A loss or decline in business with either of these customers, could have an adverse impact on our business, financial condition and results of operations.

We assemble our products at our manufacturing facilities in Latham, New York, Clifton Park, New York and Spokane, Washington, and provide our services and installations at customer locations and service centers in Illinois and Ohio.

Working Capital Items

We currently maintain inventory levels adequate for our short-term needs based upon present levels of production. We consider the component parts of our different products to be generally available and current suppliers to be reliable and capable of satisfying anticipated needs.

Distribution, Marketing and Strategic Relationships

We have developed strategic relationships with well-established companies in key areas including distribution, service, marketing, supply, technology development and product development. We sell our products worldwide, with a primary focus on North America, through our direct product sales force, original equipment manufacturers, or OEMs, and their dealer networks. Additionally, we operate in Europe under the name HyPulsion, to develop and sell hydrogen fuel cell systems for the European material handling market.

Environmental Issues

No significant pollution or other types of hazardous emission result from the Company's operations and it is not anticipated that our operations will be materially affected by federal, state or local provisions concerning environmental controls. Our costs of complying with environmental, health and safety requirements have not been material.

We do not believe that existing or pending climate change legislation, regulation, or international treaties or accords are reasonably likely to have a material effect in the foreseeable future on our business or markets that we serve, nor on our results of operations, capital expenditures or financial position. We will continue to monitor emerging developments in this area.

Competition

We experience competition in all areas of our business. The markets we address for motive power are characterized by the presence of well-established battery and combustion generator products. We believe the principal

[Table of Contents](#)

competitive factors in the markets in which we operate include product features, including size and weight, relative price and performance, lifetime operating cost, including any maintenance and support, product quality and reliability, safety, ease of use, rapid integration with existing equipment and processes, customer support design innovation, marketing and distribution capability, service and support and corporate reputation.

In the material handling market, we believe our GenDrive products have an advantage over lead-acid batteries for customers who run high-throughput distribution centers and manufacturing locations with multi-shift operations by offering increased productivity with lower operational costs. However, we expect competition in this space to intensify as competitors attempt to imitate our approach with their own offerings.

Intellectual Property

We believe that neither we nor our competitors can achieve a significant proprietary position on the basic technologies currently used in PEM fuel cell systems. However, we believe the design and integration of our system and system components, as well as some of the low-cost manufacturing processes that we have developed, are intellectual property that can be protected. Our intellectual property portfolio covers among other things: fuel cell components that reduce manufacturing part count; fuel cell system designs that lend themselves to mass manufacturing; improvements to fuel cell system efficiency, reliability and system life; and control strategies, such as added safety protections and operation under extreme conditions. In general, our employees are party to agreements providing that all inventions, whether patented or not, made or conceived while being our employee, which are related to or result from work or research that we perform, will remain our sole and exclusive property.

We have a total of 109 issued patents currently active with the USPTO and at the close of 2019, we had seven U.S. patent applications pending. Additionally, we have 20 trademarks registered with the USPTO and 2 trademark applications pending.

Government Regulation

Our products, their installations and the operations at our facilities are subject to oversight and regulation at the federal, state and local level in accordance with statutes and ordinances relating to, among others, building codes, fire codes, public safety, electrical and gas pipeline connections and hydrogen siting. The level of regulation may depend, in part, upon where a system is located.

In addition, product safety standards have been established by the American National Standards Institute, or ANSI, covering the overall fuel cell system. The class 1, 2 and 3 GenDrive products are designed with the intent of meeting the requirements of UL 2267 “Fuel Cell Power Systems for Installation in Industrial Electric Trucks” and NFPA 505 “Fire Safety Standard for Powered Industrial Trucks.” The hydrogen tanks used in these systems have been either certified to ANSI/CSA NGV2-2007 “Compressed Natural Gas Vehicle Fuel Containers” or ISO/TS 15869 “Gaseous hydrogen and hydrogen blends—Land vehicle fuel tanks.” We will continue to design our GenDrive products to meet ANSI and/or other applicable standards. We certified several models of Class 1, 2 and 3 GenDrive products to the requirements of the CE mark with guidance from a European certified body. The hydrogen tanks used in these systems are certified to the Pressure Equipment Directive by a European certified body.

The GenFuel hydrogen storage and dispensing products are designed with the intent of meeting the requirements of NFPA 2 “Hydrogen Technologies Code.”

Other than these requirements, at this time we do not know what additional requirements, if any, each jurisdiction will impose on our products or their installation. We also do not know the extent to which any new regulations may impact our ability to distribute, install and service our products. As we continue distributing our systems to our target markets, the federal, state, local or foreign government entities may seek to impose regulations or competitors may seek to influence regulations through lobbying efforts.

Raw Materials and Suppliers

Most components essential to our business are generally available from multiple sources. We believe there are component suppliers and manufacturing vendors whose loss to us could have a material adverse effect upon our business and financial condition. We are mitigating these potential risks by introducing alternate system architectures which we

[Table of Contents](#)

expect will allow us to diversify our supply chain with multiple fuel cell stack and air supply component vendors. We are also working closely with these vendors and other key suppliers on coordinated product introduction plans, strategic inventories, and internal and external manufacturing schedules and levels. Historically, we have not experienced significant delays in the supply or availability of our key raw materials or components provided by our suppliers, nor have we experienced a significant price increase for raw materials or components. We do not anticipate any such delays or significant price increases in our fiscal year 2020.

Research and Development

Because the fuel cell industry is still in the early state of adoption, our ability to compete successfully is heavily dependent upon our ability to ensure a continual and timely flow of competitive products, services, and technologies to the marketplace. We continue to develop new products and technologies and to enhance existing products in the areas of cost, size, weight, and in supporting service solutions in order to drive further commercialization.

We may also expand the range of our product offerings and intellectual property through licensing and/or acquisition of third-party business and technology. Our research and development expense totaled \$33.7 million, \$33.9 million, and \$28.7 million during the years ended December 31, 2019, 2018, and 2017, respectively. We also had cost of research and development contract revenue of \$0.2 million, zero, and \$0.3 million during the years ended December 31, 2019, 2018, and 2017, respectively. These expenses represent the cost of research and development programs that are partially funded under cost reimbursement research and development arrangements with third parties and are reported within other cost of revenue on the consolidated statements of operations.

Employees

As of December 31, 2019, we had 835 employees, including 206 temporary employees. We consider our relationship with our employees to be positive.

Financial Information About Geographic Areas

Please refer to our Geographic Information included in our consolidated financial statements and notes thereto included in Part II, Item 8 “Financial Statements and Supplementary Data” of this Annual Report on Form 10-K.

Available Information

Our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act are available free of charge, other than an investor’s own internet access charges, on the Company’s website at www.plugpower.com as soon as reasonably practicable after the Company electronically files such material with, or furnishes it to, the Securities and Exchange Commission, or the SEC. The information contained on our website is not included as a part of, or incorporated by reference into, this Annual Report on Form 10-K. The SEC also maintains an internet site that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC. The SEC’s website address is <http://www.sec.gov>.

Item 1A. Risk Factors

The following risk factors should be considered carefully in addition to the other information in this Annual Report on Form 10-K. The occurrence of any of the following material risks could harm our business and future results of operations and could result in the trading price of our common stock declining and a partial or complete loss of your investment. These risks are not the only ones that we face. Additional risks not presently known to us or that we currently consider immaterial may also impair our business operations and trading price of our common stock. The discussion contained in this Annual Report on Form 10-K contains “forward-looking statements,” within the meaning of Section 27A of the Securities Act and Section 21E of the Exchange Act, that involve risks and uncertainties. Please refer to the section entitled “Forward-Looking Statements.”

A. MARKET RISKS

Our products and performance depend largely on the availability of hydrogen gas and an insufficient supply of hydrogen could negatively affect our sales and deployment of our products and services.

Our products and services depend largely on the availability of hydrogen gas. We are dependent upon hydrogen suppliers for success with the profitable commercialization of our products and services. Although we will continue to work with hydrogen suppliers to mutually agree on terms for our customers, including, but not limited to, the competitiveness of the price of the hydrogen fuel, liquid hydrogen, hydrogen infrastructure and service costs, to the benefit of our product value proposition, ultimately we have no control over such third parties. If these fuels are not readily available or if their prices are such that energy produced by our products costs more than energy provided by other sources, then our products could be less attractive to potential users and our products' value proposition could be negatively affected. If hydrogen suppliers elect not to participate in the material handling market, there may be an insufficient supply of hydrogen for this market that could negatively affect our sales and deployment of our products and services.

We will continue to be dependent on certain third-party key suppliers for components in our products. The failure of a supplier to develop and supply components in a timely manner or at all, 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 manufacture our products or could increase our cost of production.

We rely on certain key suppliers for critical components in our products, and there are numerous other components for our products that are sole sourced. If we fail to maintain our relationships with our suppliers or build relationships with new suppliers, or if suppliers are unable to meet our demand, we may be unable to manufacture our products, or our products may be available only at a higher cost or after a delay. In addition, to the extent that our supply partners use technology or manufacturing processes that are proprietary, we may be unable to obtain comparable components from alternative sources.

The failure of a supplier to develop and supply components in a timely manner or at all, or to develop or supply components that meet our quality, quantity and 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 manufacture our products or could increase our cost of production. If we cannot obtain substitute materials or components on a timely basis or on acceptable terms, we could be prevented from delivering our products to our customers within required timeframes. Any such delays could result in sales and installation delays, cancellations, penalty payments or loss of revenue and market share, any of which could have a material adverse effect on our business, results of operations, and financial condition.

Volatility in commodity prices and product shortages may adversely affect our gross margins.

Some of our products contain commodity-priced materials. Commodity prices and supply levels affect our costs. For example, platinum is a key material in our PEM fuel cells. Platinum is a scarce natural resource and we are dependent upon a sufficient supply of this commodity.

Any shortages could adversely affect our ability to produce commercially viable fuel cell systems and significantly raise our cost of producing our fuel cell systems. While we do not anticipate significant near- or long-term shortages in the supply of platinum, a shortage could adversely affect our ability to produce commercially viable PEM fuel cells or raise our cost of producing such products. Our ability to pass on such increases in costs in a timely manner depends on market conditions, and the inability to pass along cost increases could result in lower gross margins.

Our ability to source parts and raw materials from our suppliers could be disrupted or delayed in our supply chain which could adversely affect our results of operations.

Our operations require significant amounts of necessary parts and raw materials. We deploy a continuous, companywide process to source our parts and raw materials from fewer suppliers, and to obtain parts from suppliers in low-cost countries where possible. If we are unable to source these parts or raw materials, our operations may be disrupted, or we could experience a delay or halt in certain of our manufacturing operations. We believe that our supply management and production practices are based on an appropriate balancing of the foreseeable risks and the costs of alternative practices. Nonetheless, reduced availability or interruption in supplies, whether resulting from more stringent regulatory requirements; supplier financial condition; increases in duties and tariff costs; disruptions in transportation; an outbreak of

[Table of Contents](#)

a severe public health pandemic, such as the recent coronavirus outbreak in China; severe weather; the occurrence or threat of wars or other conflicts, could have an adverse effect on our financial condition, results of operations and cash flows.

We depend on a concentration of anchor customers for the majority of our revenues and the loss of any of these customers would adversely affect our business, financial condition, results of operations and cash flows.

We sell most of our products to a range of customers that include a few anchor customers, and while we are continually seeking to expand our customer base, we expect this will continue for the next several years. For example, for the year ended December 31, 2019, 49.6% of our total consolidated revenues were associated primarily with two customers. For the year ended December 31, 2018, 66.7% of our total consolidated revenues were associated primarily with two customers. For the year ended December 31, 2017, 71.8% of our total consolidated revenues were associated primarily with two customers. Any decline in business with significant customers could have an adverse impact on our business, financial condition and results of operations. Our future success is dependent upon the continued purchases of our products by a small number of customers. If we are unable to broaden our customer base and expand relationships with potential customers, our business will continue to be impacted by demand fluctuations due to our dependence on a small number of customers. Demand fluctuations can have a negative impact on our revenues, business, financial condition, results of operations and cash flows. Our dependence on a small number of major customers exposes us to additional risks. A slowdown, delay or reduction in a customer's orders could result in excess inventories or unexpected quarterly fluctuations in our operating results and liquidity. Each of our major customers has significant purchasing leverage over us to require changes in sales terms including pricing, payment terms and product delivery schedules, which could adversely affect our business, financial condition, results of operations and cash flows. At December 31, 2019, two customers comprised approximately 63.4% of the total accounts receivable balance. At December 31, 2018, two customers comprised approximately 52.3% of the total accounts receivable balance. If one of our major customers delays payment of or is unable to pay their receivables, that could have a material adverse effect on our business, financial condition, results of operations and cash flows.

Weakness in the economy, market trends and other conditions affecting the profitability and financial stability of our customers could negatively impact our sales growth and results of operations.

The demand for our products and services is sensitive to the production activity, capital spending and demand for products and services of our customers. Many of our customers operate in markets that are subject to cyclical fluctuations resulting from market uncertainty, trade and tariff policies, costs of goods sold, currency exchange rates, central bank interest rate changes, foreign competition, offshoring of production, oil and natural gas prices, geopolitical developments, labor shortages, inflation, deflation, and a variety of other factors beyond our control. Any of these factors could cause customers to idle or close facilities, delay purchases, reduce production levels, or experience reductions in the demand for their own products or services.

Any of these events could also reduce the volume of products and services these customers purchase from us or impair the ability of our customers to make full and timely payments and could cause increased pressure on our selling prices and terms of sale. Accordingly, a significant or prolonged slowdown in activity in the United States or any other major world economy, or a segment of any such economy, could negatively impact our sales growth and results of operations.

We face risks associated with our plans to market, distribute and service our products and services internationally.

We have begun to market, distribute, sell and service our product offerings internationally. We have limited experience operating internationally, including developing and manufacturing our products to comply with the commercial and legal requirements of international markets. Our success in international markets will depend, in part, on our ability and that of our partners to secure relationships with foreign sub-distributors, and our ability to manufacture products that meet foreign regulatory and commercial requirements. Additionally, our planned international operations are subject to other inherent risks, including potential difficulties in enforcing contractual obligations and intellectual property rights in foreign countries, and could be adversely affected due to fluctuations in currency exchange rates, political and economic instability, acts or threats of terrorism, changes in governmental policies or policies of central banks, expropriation, nationalization and/or confiscation of assets, price controls, fund transfer restrictions, capital controls, exchange rate controls, taxes, unfavorable political and diplomatic developments, changes in legislation or regulations and other additional developments or restrictive actions over which we will have no control.

[Table of Contents](#)

Doing business in foreign markets requires us to be able to respond to rapid changes in market, legal, and political conditions in these countries. As we expand in international markets, we may face numerous challenges, including unexpected changes in regulatory requirements; potential conflicts or disputes that countries may have to deal with; required compliance with anti-bribery laws, such as the U.S. Foreign Corrupt Practices Act, data privacy requirements, labor laws and anti-competition regulations; export or import restrictions; laws and business practices favoring local companies; fluctuations in currency exchange rates; longer payment cycles and difficulties in collecting accounts receivables; difficulties in managing international operations; potentially adverse tax consequences, tariffs, customs charges, bureaucratic requirements and other trade barriers; restrictions on repatriation of earnings and the burdens of complying with a wide variety of international laws. Any of these factors could adversely affect our results of operations and financial condition. The success of our international expansion will depend, in part, on our ability to succeed in navigating the different legal, regulatory, economic, social and political environments. For example, the United Kingdom formally left the European Union on January 31, 2020, at which point a transition period began. The United Kingdom is expected to continue to follow certain European Union rules during the transition period; however, the ongoing process of negotiations between the United Kingdom and the European Union will determine the future terms of the United Kingdom's relationship with the European Union, including access to European Union markets, either during the transitional period or more permanently. We have no control over and cannot predict the effect of the United Kingdom's exit from the European Union nor over whether and to which effect any other member state will decide to exit the European Union in the future. These developments, as well as potential crises and forms of political instability arising therefrom or any other as of yet unforeseen development, may harm our business.

Our products and services face intense competition.

The markets for energy products are intensely competitive. Some of our competitors in the motive power sector (predominantly incumbent technologies) are much larger than we are and may have the manufacturing, marketing and sales capabilities to complete research, development and commercialization of profitable, commercially viable products more quickly and effectively than we can. There are many companies engaged in all areas of traditional and alternative energy generation in the United States and abroad, including, among others, major electric, oil, chemical, natural gas, battery, generator and specialized electronics firms, as well as universities, research institutions and foreign government-sponsored companies. These firms are engaged in forms of power generation such as advanced battery technologies, generator sets, fast charged technologies and other types of fuel cell technologies. In addition, the primary current value proposition for our customers stems from productivity gains in using our solutions. Longer term, given evolving market dynamics and changes in alternative energy tax credits, if we are unable to successfully develop future products that are competitive with competing technologies in terms of price, reliability and longevity, customers may not buy our products. Technological advances in alternative energy products, battery systems or other fuel cell technologies may make our products less attractive or render them obsolete.

B. FINANCIAL AND LIQUIDITY RISKS

If we cannot obtain financing to support the sale or leasing of our products and services to customers, such failure may adversely affect our liquidity and financial position.

Customers representing most of our revenue lease, rather than purchase, our products. These lease arrangements require us and our customers to finance the purchase of such products, either ourselves or through third-party financing sources. To date, we have been successful in obtaining or providing the necessary financing arrangements. There is no certainty, however, that we will be able to continue to obtain or provide adequate financing for these arrangements on acceptable terms, or at all, in the future. Failure to obtain or provide such financing may result in the loss of material customers and product sales, which could have a material adverse effect on our business, financial condition and results of operations. Further, if we are required to continue to pledge or restrict substantial amounts of our cash to support these financing arrangements, such cash will not be available to us for other purposes, which may have a material adverse effect on our liquidity and financial position. For example, approximately \$230.0 million of our cash is currently restricted to support such leasing arrangements, which prevents us from using such cash for other purposes.

We may require additional capital funding and such capital may not be available to us.

On December 31, 2019, we had cash and cash equivalents of \$139.5 million, restricted cash of \$230.0 million and net working capital of \$162.5 million. This compares to \$38.6 million, \$71.6 million and \$9.2 million of cash and cash equivalents, restricted cash and net working capital, respectively, on December 31, 2018.

[Table of Contents](#)

Our cash requirements relate primarily to working capital needed to operate and grow our business, including funding operating expenses, growth in inventory to support both shipments of new units and servicing the installed base, growth in equipment leased to customers under long-term arrangements, funding the growth in our GenKey “turn-key” solution, which includes the installation of our customers’ hydrogen infrastructure as well as delivery of the hydrogen fuel, continued expansion of our markets, such as Europe and China, continued development and expansion of our products, such as Pro Gen, payment of lease obligations under sale/leaseback financings, and the repayment or refinancing of our long-term debt. Our ability to meet future liquidity needs and capital requirements will depend upon numerous factors, including the timing and quantity of product orders and shipments; attaining and expanding positive gross margins across all product lines; the timing and amount of our operating expenses; the timing and costs of working capital needs; the timing and costs of building a sales base; the ability of our customers to obtain financing to support commercial transactions; our ability to obtain financing arrangements to support the sale or leasing of our products and services to customers, including financing arrangements to repay or refinance our long-term debt, and the terms of such agreements that may require us to pledge or restrict substantial amounts of our cash to support these financing arrangements; the timing and costs of developing marketing and distribution channels; the timing and costs of product service requirements; the timing and costs of hiring and training product staff; the extent to which our products gain market acceptance; the timing and costs of product development and introductions; the extent of our ongoing and new research and development programs; and changes in our strategy or our planned activities. If we are unable to fund our operations with positive cash flows and cannot obtain external financing, we may not be able to sustain future operations. As a result, we may be required to delay, reduce and/or cease our operations and/or seek bankruptcy protection.

We cannot assure you that any necessary additional financing will be available on terms favorable to us, or at all. We believe that it could be difficult to raise additional funds and there can be no assurance as to the availability of additional financing or the terms upon which additional financing may be available. Additionally, even if we raise sufficient capital through additional equity or debt financings, strategic alternatives or otherwise, there can be no assurance that the revenue or capital infusion will be sufficient to enable us to develop our business to a level where it will be profitable or generate positive cash flow. If we incur additional debt, a substantial portion of our operating cash flow may be dedicated to the payment of principal and interest on such indebtedness, thus limiting funds available for our business activities. The terms of any debt securities issued could also impose significant restrictions on our operations. Broad market and industry factors may seriously harm the market price of our common stock, regardless of our operating performance, and may adversely impact our ability to raise additional funds. If we raise additional funds through collaborations and/or licensing arrangements, we might be required to relinquish significant rights to our technologies or grant licenses on terms that are not favorable to us.

We have incurred losses and anticipate continuing to incur losses.

We have not achieved operating profitability in any quarter since our formation and we will continue to incur net losses until we can produce sufficient revenue to cover our costs. Our net losses were approximately \$85.5 million in 2019, \$78.1 million in 2018 and \$127.1 million in 2017. As of December 31, 2019, we had an accumulated deficit of \$1.3 billion. We anticipate that we will continue to incur losses until we can produce and sell our products on a large-scale and cost-effective basis. We cannot guarantee when we will operate profitably, if ever. In order to achieve profitability, we must successfully execute our planned path to profitability in the early adoption markets on which we are focused. The profitability of our products depends largely on material and manufacturing costs and the market price of hydrogen. The hydrogen infrastructure that is needed to support our growth readiness and cost efficiency must be available and cost efficient. We must continue to shorten the cycles in our product roadmap with respect to improvement in product reliability and performance that our customers expect. We must execute on successful introduction of our products into the market. We must accurately evaluate our markets for, and react to, competitive threats in both other technologies (such as advanced batteries) and our technology field. Finally, we must continue to lower our products’ build costs and lifetime service costs. If we are unable to successfully take these steps, we may never operate profitably, and, even if we do achieve profitability, we may be unable to sustain or increase our profitability in the future.

Our indebtedness could adversely affect our liquidity, financial condition and our ability to fulfill our obligations and operate our business.

At December 31, 2019, our total outstanding indebtedness was approximately \$222.4 million, consisting of \$39.6 million of the \$40.0 million in aggregate principal amount of 7.5% Convertible Senior Note due on January 5, 2023, \$70.6 million of the \$100.0 million in aggregate principal amount of 5.5% Convertible Senior Notes due on March 15, 2023 and \$112.2 million of outstanding indebtedness primarily associated with our Term Loan Facility, with

Generate Lending, LLC, or the Term Loan Facility, and other long-term debt.

Our high level of indebtedness could have negative consequences on our future operations, including:

- we may have difficulty satisfying our obligations with respect to our outstanding debt;
- we may have difficulty obtaining financing in the future for working capital, capital expenditures, acquisitions or other purposes;
- we may need to use all, or a substantial portion, of our available cash flow to pay interest and principal on our debt, which will reduce the amount of money available to finance our operations and other business activities;
- our vulnerability to general economic downturns and adverse industry conditions could increase;
- our flexibility in planning for, or reacting to, changes in our business and in our industry in general could be limited;
- our amount of debt and the amount we must pay to service our debt obligations could place us at a competitive disadvantage compared to our competitors that may have less debt; and
- our failure to comply with the covenants in the agreement governing our Term Loan Facility which, among other things, limit our ability to incur debt and sell assets, could result in an event of default that, if not cured or waived, could have a material adverse effect on our business or prospects.

Our level of indebtedness will require that we use a substantial portion of our cash flow from operations to pay principal of, and interest on, our indebtedness, which will reduce the availability of cash to fund working capital requirements, capital expenditures, research and development and other general corporate or business activities. Our ability to generate cash to repay our indebtedness is subject to the performance of our business, as well as general economic, financial, competitive and other factors that are beyond our control. If our business does not generate sufficient cash flow from operating activities or if future borrowings are not available to us in amounts sufficient to enable us to fund our liquidity needs, our operating results and financial condition may be adversely affected.

The agreement governing our Term Loan Facility contains covenant restrictions that may limit our ability to operate our business.

We may be unable to respond to changes in business and economic conditions, engage in transactions that might otherwise be beneficial to us, or obtain additional financing, because the agreement governing our Term Loan Facility contains covenant restrictions that limit our ability to, among other things: incur additional debt, create liens, make acquisitions, make loans, pay dividends, dissolve, or enter into leases and asset sale. In addition, the agreement requires that we comply with a collateral coverage covenant that was first measured on December 31, 2019. Our ability to comply with these covenants is dependent on our future performance, which will be subject to many factors, some of which are beyond our control, including prevailing economic conditions. In addition, our failure to comply with this covenant could result in a default under our other debt instruments, which could permit the holders to accelerate such debt. If any of our debt is accelerated, we may not have sufficient funds available to repay such debt, which could materially and negatively affect our financial condition and results of operations.

Although we are currently in compliance with the covenants contained in the agreement governing our Term Loan Facility, we cannot assure you that we will be able to remain in compliance with such covenants in the future. An event of default under the agreement governing our Term Loan Facility could have a material adverse effect on our liquidity, financial condition, and results of operations.

Convertible debt securities that may be settled in cash could have a material effect on our reported financial results.

Under Accounting Standards Codification 470-20, *Debt with Conversion and Other Options*, or ASC 470-20, an entity must separately account for the liability and equity components of the convertible debt instruments (such as our \$40.0 million in aggregate principal amount of 7.5% Convertible Senior Note due on January 5, 2023 and our \$100.0 million in aggregate principal amount of 5.5% Convertible Senior Notes due on March 15, 2023) that may be settled entirely or partially in cash upon conversion in a manner that reflects the issuer's economic interest cost. The effect of ASC 470-20 on the accounting for the convertible senior notes is that the equity component is required to be included in

[Table of Contents](#)

the additional paid-in capital section of stockholders' equity on our consolidated balance sheet at the issuance date and the value of the equity component would be treated as debt discount for purposes of accounting for the debt component of the convertible senior notes. As a result, we are required to record a non-cash interest expense as a result of the amortization of the discounted carrying value of the convertible senior notes to their face amount over the term of the convertible senior notes. As a result, we report larger net losses (or lower net income) in our financial results because ASC 470-20 requires interest to include the amortization of the debt discount, which could adversely affect our reported or future financial results or the trading price of our common stock.

While the Company plans to settle the principal amount of the convertible senior notes in cash subject to available funding at time of settlement, we currently use the if-converted method for calculating any potential dilutive effect of the conversion option on diluted net income per share, subject to meeting the criteria for using the treasury stock method in future periods. We cannot be sure that the accounting standards in the future will permit the use of the treasury stock method. If we are unable or otherwise elect not to use the treasury stock method in accounting for the shares issuable upon conversion of the convertible senior notes, then our diluted earnings per share could be adversely affected.

The convertible note hedges may affect the value of our common stock.

In connection with the pricing of the 5.5% convertible senior notes due in 2023, which we refer to herein as the \$100 million Convertible Senior Notes, we entered into convertible note hedge transactions with one or more of the initial purchasers of the \$100 million Convertible Senior Notes and/or their respective affiliates or other financial institutions, or the option counterparties. The convertible note hedge transactions are generally expected to reduce the potential dilution upon any conversion of \$100 million Convertible Senior Notes and/or provide a source of cash to settle a portion of its cash payments related to any excess over the principal amount upon conversion of any \$100 million Convertible Senior Notes.

The option counterparties and/or their respective affiliates may modify their hedge positions by entering into or unwinding various derivatives with respect to our common stock and/or purchasing or selling our common stock in secondary market transactions prior to the maturity of the \$100 million Convertible Senior Notes (and are likely to do so during any observation period related to a conversion of \$100 million Convertible Senior Notes or following any repurchase of \$100 million Convertible Senior Notes by us on any fundamental change repurchase date or otherwise). This activity could also cause or avoid an increase or a decrease in the market price of our common stock. In addition, if any such convertible note hedge transaction fails to become effective, the option counterparties may unwind their hedge positions with respect to our common stock, which could adversely affect the value of our common stock. The potential effect, if any, of these transactions and activities on the market price of our common stock will depend in part on market conditions and cannot be ascertained at this time. Any of these activities could adversely affect the value of our common stock.

We are subject to counterparty risk with respect to the convertible note hedge transactions.

The option counterparties are financial institutions or affiliates of financial institutions and are subject to the risk that one or more of such option counterparties may default under the convertible note hedge transactions. Our exposure to the credit risk of the option counterparties is not secured by any collateral. If any option counterparty becomes subject to bankruptcy or other insolvency proceedings, we will become an unsecured creditor in those proceedings with a claim equal to our exposure at that time under our transactions with that option counterparty. Our exposure will depend on many factors but, generally, an increase in our exposure will be correlated to an increase in our common stock market price and in the volatility of the market price of our common stock. In addition, upon a default by an option counterparty, we may suffer adverse tax consequences and dilution with respect to our common stock. We can provide no assurance as to the financial stability or viability of any option counterparty.

C. OPERATIONAL RISKS

We may not be able to expand our business or manage our future growth effectively.

We may not be able to expand our business or manage future growth. We plan to continue to improve our manufacturing processes and build additional manufacturing production over the next five years, which will require successful execution of:

[Table of Contents](#)

- expanding our existing customers and expanding to new markets;
- ensuring manufacture, delivery and installation of our products;
- implementing and improving additional and existing administrative, financial and operations systems, procedures and controls;
- hiring additional employees;
- expanding and upgrading our technological capabilities;
- managing relationships with our customers and suppliers and strategic partnerships with other third parties;
- maintaining adequate liquidity and financial resources; and
- continuing to increase our revenues from operations.

Ensuring delivery of our products is subject to many market risks, including scarcity, significant price fluctuations and competition. Maintaining adequate liquidity is dependent upon a variety of factors, including continued revenues from operations, working capital improvements, and compliance with our debt instruments. We may not be able to achieve our growth strategy and increase production capacity as planned during the foreseeable future. If we are unable to manage our growth effectively, we may not be able to take advantage of market opportunities, develop new products, satisfy customer requirements, execute our business plan, or respond to competitive pressures.

Delays in or not completing our product development goals may adversely affect our revenue and profitability.

If we experience delays in meeting our development goals, our products exhibit technical defects, or if we are unable to meet cost or performance goals, including power output, useful life and reliability, the profitable commercialization of our products will be delayed. In this event, potential purchasers of our products may choose alternative technologies and any delays could allow potential competitors to gain market advantages. We cannot assure that we will successfully meet our commercialization schedule in the future.

Periodically, we may enter into contracts with our customers for certain products that have not been developed or produced. There can be no assurance that we will complete the development of these products and meet the specifications required to fulfill customer agreements and deliver products on schedule. Pursuant to such agreements, the customers would have the right to provide notice to us if, in their good faith judgment, we have materially deviated from such agreements. Should a customer provide such notice, and we cannot mutually agree to a modification to the agreement, then the customer may have the right to terminate the agreement, which could adversely affect our future business.

Other than our current products, which we believe to be commercially viable at this time, we do not know when or whether we will successfully complete research and development of other commercially viable products that could be critical to our future. If we are unable to develop additional commercially viable products, we may not be able to generate sufficient revenue to become profitable. The profitable commercialization of our products depends on our ability to reduce the costs of our components and subsystems, and we cannot assure you that we will be able to sufficiently reduce these costs. In addition, the profitable commercialization of our products requires achievement and verification of their overall reliability, efficiency and safety targets, and we cannot assure you that we will be able to develop, acquire or license the technology necessary to achieve these targets. We must complete additional research and development to fill our product portfolios and deliver enhanced functionality and reliability in order to manufacture additional commercially viable products in commercial quantities. In addition, while we continue to conduct tests to predict the overall life of our products, we may not have run our products over their projected useful life prior to large-scale commercialization. As a result, we cannot be sure that our products will last as long as predicted, resulting in possible warranty claims and commercial failures.

Certain component quality issues have resulted in adjustments to our warranty reserves and the accrual for loss contracts.

In the past, quality issues have arisen with respect to certain components in certain products that are currently being used at customer sites. Under the terms of our extended maintenance contracts, we have had to retrofit units subject to component quality issues with replacement components to improve the reliability of our products for our customers. We recorded a provision for loss contracts related to service in prior years. Though we continue to work with our vendors on these component issues to improve quality and reliability, unanticipated additional quality issues or warranty claims may arise, and additional material charges may be incurred in the future. Quality issues also could cause profitable maintenance contracts to become unprofitable.

In addition, from time to time we experience other unexpected design, manufacturing or product performance issues. We make significant investment in the continued improvement of our products and maintain appropriate warranty reserves for known and unexpected issues; however, unknown malfunctions or defects could result in unexpected material liabilities and could adversely affect our business, financial condition, results of operation, cash flows and prospects. For example, in 2019, we commenced a field replacement program for certain composite fuel tanks that did not meet the supply contract standard, as determined by us and the manufacturer. The manufacturer of the tanks is funding the entire incremental cost of the replacement program and we are working with our customers to ensure an efficient, minimally disruptive process for the exchange. In addition, an actual or perceived problem could adversely affect the market's perception of our products resulting in a decline in demand for our products and could divert the attention of our management, which may materially and adversely affect our business, financial condition, results of operations, cash flows and prospects.

Our products use flammable fuels that are inherently dangerous substances.

Our fuel cell systems use hydrogen gas in catalytic reactions. While our products do not use this fuel in a combustion process, hydrogen gas is a flammable fuel that could leak and combust if ignited by another source. Further, any such accidents involving our products or other products using similar flammable fuels could materially suppress demand for, or heighten regulatory scrutiny of, our products.

The risk of product liability claims and associated adverse publicity is inherent in the development, manufacturing, marketing and sale of fuel cell products, including products fueled by hydrogen, a flammable gas. Any liability for damages resulting from malfunctions or design defects could be substantial and could materially adversely affect our business, financial condition, results of operations and prospects. In addition, an actual or perceived problem with our products could adversely affect the market's perception of our products resulting in a decline in demand for our products, which may materially and adversely affect our business, financial condition, results of operations and prospects.

Our purchase orders may not ship, be commissioned or installed, or convert to revenue.

Some of the orders we accept from customers require certain conditions or contingencies to be satisfied, or may be cancelled, prior to shipment or prior to commissioning or installation, some of which are outside of our control. Historically, shipments made against these orders have generally occurred between ninety days and twenty-four months from the date of acceptance of the order. Orders for the Company's products and services approximated \$481.5 million and \$225.5 million for the years ended December 31, 2019 and 2018, respectively. The Company's backlog for products and services approximated \$840.6 million and \$540.0 million as of December 31, 2019 and 2018, respectively. The time periods from receipt of an order to shipment date and installation vary widely and are determined by a number of factors, including the terms of the customer contract and the customer's deployment plan. There may also be product redesign or modification requirements that must be satisfied prior to shipment of units under certain of our agreements. If the redesigns or modifications are not completed, some or all of our orders may not ship or convert to revenue. In certain cases, we publicly disclose anticipated, pending orders with prospective customers; however, those prospective customers may require certain conditions or contingencies to be satisfied prior to entering into a purchase order with us, some of which are outside of our control. Such conditions or contingencies that may be required to be satisfied before we receive a purchase order may include, but are not limited to, successful product demonstrations or field trials. Converting orders into revenue is also dependent upon our customers' ability to obtain financing. Some conditions or contingencies that are out of our control may include, but are not limited to, government tax policy, government funding programs, and government incentive programs. Additionally, some conditions and contingencies may extend for several years. We may have to compensate customers, by either reimbursement, forfeiting portions of associated revenue, or other methods depending on the terms of the customer contract, based on the failure on any of these conditions or contingencies. While not probable, this could have an adverse impact on our revenue and cash flow.

We are dependent on information technology in our operations and the failure of such technology may adversely affect our business.

We may experience problems with the operation of our current information technology systems or the technology systems of third parties on which we rely, as well as the development and deployment of new information technology systems, that could adversely affect, or even temporarily disrupt, all or a portion of our operations until resolved. Inabilities and delays in implementing new systems can also affect our ability to realize projected or expected cost savings. Despite the implementation of network security measures, our information technology could be penetrated by outside parties (such

as computer hackers or cyber terrorists) intent on extracting information, corrupting information or disrupting business processes. Such unauthorized access could disrupt our business and could result in a loss of assets or reputational damage. Additionally, any systems failures could impede our ability to timely collect and report financial results in accordance with applicable laws.

Our future plans could be harmed if we are unable to attract or retain key personnel.

We have attracted a highly skilled management team and specialized workforce, including scientists, engineers, researchers, manufacturing, marketing and sales professionals. Our future success will depend, in part, on our ability to attract and retain qualified management and technical personnel. We do not know whether we will be successful in hiring or retaining qualified personnel. Our inability to hire qualified personnel on a timely basis, or the departure of key employees, could materially and adversely affect our development and profitable commercialization plans and, therefore, our business prospects, results of operations and financial condition.

We may not be able to protect important intellectual property and we could incur substantial costs defending against claims that our products infringe on the proprietary rights of others.

PEM fuel cell technology was first developed in the 1950s, and fuel processing technology has been practiced on a large scale in the petrochemical industry for decades. Accordingly, we do not believe that we can establish a significant proprietary position in the fundamental component technologies in these areas. However, our ability to compete effectively will depend, in part, on our ability to protect our proprietary system-level technologies, systems designs and manufacturing processes. We rely on patents, trademarks, and other policies and procedures related to confidentiality to protect our intellectual property. However, some of our intellectual property is not covered by any patent or patent application. Moreover, we do not know whether any of our pending patent applications will issue or, in the case of patents issued or to be issued, that the claims allowed are or will be sufficiently broad to protect our technology or processes. Even if all of our patent applications are issued and are sufficiently broad, our patents may be challenged or invalidated. We could incur substantial costs in prosecuting or defending patent infringement suits or otherwise protecting our intellectual property rights. While we have attempted to safeguard and maintain our proprietary rights, we do not know whether we have been or will be completely successful in doing so. Moreover, patent applications filed in foreign countries may be subject to laws, rules and procedures that are substantially different from those of the United States, and any resulting foreign patents may be difficult and expensive to obtain and enforce. In addition, we do not know whether the U.S. Patent & Trademark Office will grant federal registrations based on our pending trademark applications. Even if federal registrations are granted to us, our trademark rights may be challenged. It is also possible that our competitors or others will adopt trademarks similar to ours, thus impeding our ability to build brand identity and possibly leading to customer confusion. We could incur substantial costs in prosecuting or defending trademark infringement suits.

Further, our competitors may independently develop or patent technologies or processes that are substantially equivalent or superior to ours. If we are found to be infringing third party patents, we could be required to pay substantial royalties and/or damages, and we do not know whether we will be able to obtain licenses to use such patents on acceptable terms, if at all. Failure to obtain needed licenses could delay or prevent the development, manufacture or sale of our products, and could necessitate the expenditure of significant resources to develop or acquire non-infringing intellectual property.

We may need to pursue lawsuits or legal action in the future to enforce our intellectual property rights, to protect our trade secrets and domain names, and to determine the validity and scope of the proprietary rights of others. If third parties prepare and file applications for trademarks used or registered by us, we may oppose those applications and be required to participate in proceedings to determine the priority of rights to the trademark. Similarly, competitors may have filed applications for patents, may have received patents and may obtain additional patents and proprietary rights relating to products or technology that block or compete with ours. We may have to participate in interference proceedings to determine the priority of invention and the right to a patent for the technology. Litigation and interference proceedings, even if they are successful, are expensive to pursue and time consuming, and we could use a substantial amount of our management and financial resources in either case.

Confidentiality agreements to which we are party may be breached, and we may not have adequate remedies for any breach. Our trade secrets may also be known without breach of such agreements or may be independently developed by competitors. Our inability to maintain the proprietary nature of our technology and processes could allow our competitors to limit or eliminate any competitive advantages we may have.

We are subject to legal proceedings and legal compliance risks that could harm our business.

From time to time, we may be subject to contract disputes or litigation. In connection with any disputes or litigation in which we are involved, we may incur costs and expenses in connection with defending ourselves or in connection with the payment of any settlement or judgment or compliance with any ruling in connection therewith. The expense of defending litigation may be significant. The amount of time to resolve lawsuits is unpredictable and defending ourselves may divert management's attention from the day-to-day operations of our business, which could adversely affect our business, financial condition, results of operations and cash flows. In addition, an unfavorable outcome in any such litigation could have a material adverse effect on our business, results of operations, financial condition and cash flows.

Our financial results may be adversely affected by changes in accounting principles generally accepted in the United States.

Generally accepted accounting principles in the United States, or GAAP, are subject to interpretation by the Financial Accounting Standards Board, or FASB, the American Institute of Certified Public Accountants, the SEC and various bodies formed to promulgate and interpret appropriate accounting principles. See Note 2 to our consolidated financial statements included in this report regarding the effect of new accounting pronouncements on our financial statements. Any difficulties in implementing these pronouncements could cause us to fail to meet our financial reporting obligations, which could result in regulatory discipline and harm investors' confidence in us. Further, the implementation of new accounting pronouncements or a change in other principles or interpretations could have a significant effect on our financial results.

If our estimates or judgments relating to our critical accounting policies are based on assumptions that change or prove to be incorrect, our operating results could fall below expectations of investors, resulting in a decline in our stock price.

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the amounts reported in our consolidated financial statements and accompanying notes. For example, our revenue recognition policy is complex, and we often must make estimates and assumptions that could prove to be inaccurate. We base our estimates on historical experience and on various other assumptions that we believe to be reasonable under the circumstances. Significant assumptions and estimates used in preparing our consolidated financial statements include those related to revenue recognition, loss accrual for service, leases and provision for common stock warrants. Our operating results may be adversely affected if our assumptions change or if actual circumstances differ from those in our assumptions, which could cause our operating results to fall below the expectations of investors, resulting in a decline in our stock price.

If we fail to maintain an effective system of internal controls, we may not be able to accurately report our financial results or prevent fraud.

Effective internal controls over financial reporting are necessary for us to provide reliable and accurate financial reports and effectively prevent fraud. We have devoted significant resources and time to comply with the internal control over financial reporting requirements of the Sarbanes-Oxley Act of 2002. In addition, Section 404 under the Sarbanes-Oxley Act of 2002 requires that we assess the design and operating effectiveness of our controls over financial reporting. We are required to have our auditors attest to the effectiveness of our internal control over financial reporting. Our compliance with the annual internal control report requirement will depend on the effectiveness of our financial reporting and data systems and controls. Inferior internal controls increase the possibility of errors and could cause investors to lose confidence in our reported financial information, which could have a negative effect on the trading price of our stock and our access to capital.

In addition, our internal control systems rely on people trained in the execution of the controls. Loss of these people or our inability to replace them with similarly skilled and trained individuals or new processes in a timely manner could adversely impact our internal control mechanisms.

D. REGULATORY RISKS

The reduction or elimination of government subsidies and economic incentives for alternative energy technologies, or the failure to renew such subsidies and incentives could reduce demand for our products, lead to a reduction in our revenues and adversely impact our operating results and liquidity.

We believe that the near-term growth of alternative energy technologies is affected by the availability and size of government and economic incentives. Many of these government incentives expire, phase out over time, may exhaust the allocated funding, or require renewal by the applicable authority. In addition, these incentive programs could be reduced or discontinued for other reasons. The investment tax credit under the U.S. tax code was renewed in February 2018. The renewal allows for a 30% investment tax credit which ratchets down to 26% for 2020, 22% for 2021 and 10% for 2022 and later. The reduction, elimination, or expiration of the investment tax credit or other government subsidies and economic incentives, or the failure to renew such tax credit, governmental subsidies, or economic incentives, may result in the diminished economic competitiveness of our products to our customers and could materially and adversely affect the growth of alternative energy technologies, including our products, as well as our future operating results and liquidity.

We are subject to various federal, state and local environmental and human health and safety laws and regulations that could impose significant costs and liabilities on us.

Our operations are subject to federal, state, and local environmental and human health and safety laws and regulations, including laws and regulations relating to the use, handling, storage, transportation, disposal and human exposure to hazardous substances and wastes, product safety, emissions of pollution into the environment and human health and safety. We have incurred and expect to continue to incur, costs to comply with these laws and regulations. Violation of these laws or regulations or the occurrence of an explosion or other accident in connection with our fuel cell systems at our properties or at third party locations could lead to substantial liabilities and sanctions, including fines and penalties, cleanup costs or the requirement to undertake corrective action. Further, environmental laws and regulations, and the administration, interpretation and enforcement thereof, are subject to change and may become more stringent in the future, each of which could materially adversely affect our business, financial condition and results of operations.

Additionally, certain environmental laws impose liability, which can be joint, several and strict, on current and previous owners and operators of real property for the cost of removal or remediation of hazardous substances and damage to natural resources. These laws often impose liability even if the owner or operator did not know of, or was not responsible for, the release of such hazardous substances. They can also assess liability on persons who arrange for hazardous substances to be sent to disposal or treatment facilities when such facilities are found to be contaminated, and such persons can be responsible for cleanup costs even if they never owned or operated the contaminated facility. Our liabilities arising from past or future releases of, or exposure to, hazardous substances may adversely affect our business, financial condition and results of operations.

Tariffs could have a material adverse effect on our business.

Our business is dependent on the availability of raw materials and components for our products, particularly electrical components common in the semiconductor industry. There is currently significant uncertainty about the future relationship between the United States and various other countries, most significantly China, with respect to trade policies, treaties, tariffs and taxes. The current U.S. presidential administration has called for substantial changes to U.S. foreign trade policy with respect to China and other countries, including the possibility of imposing greater restrictions on international trade and significant increases in tariffs on goods imported into the United States. In 2018, the Office of the U.S. Trade Representative imposed tariffs on imports into the United States from China, including steel and aluminum imports, and the countries continue to negotiate a trade deal. An increase in tariffs will cause our cost of raw materials for our products to increase, which could narrow the profits we earn from sales of products requiring such materials. Furthermore, if tariffs, trade restrictions, or trade barriers are placed on products such as ours by foreign governments, especially China, the prices for our products may increase, which may result in the loss of customers and harm to our business, financial condition and results of operations.

Although we currently maintain alternative sources for raw materials, our business is subject to the risk of price fluctuations and periodic delays in the delivery of certain raw materials, which tariffs may exacerbate. Disruptions in the supply of raw materials and components could temporarily impair our ability to manufacture our products for our customers or require us to pay higher prices to obtain these raw materials or components from other sources, which could affect our business and our results of operations. While it is too early to predict how the enacted tariffs on imported steel

and aluminum will impact our business, the imposition of tariffs on items imported by us from China or other countries could increase our costs and could have a material adverse effect on our business and our results of operations.

Our business may become subject to increased government regulation.

Our products are subject to certain federal, local, and non-U.S. laws and regulations, including, for example, state and local ordinances relating to building codes, public safety, electrical and gas pipeline connections, hydrogen transportation and siting and related matters. See “Business—Government Regulations” for additional information. In certain jurisdictions, these regulatory requirements may be more stringent than those in the United States. Further, as products are introduced into the market commercially, governments may impose new regulations. We do not know the extent to which any such regulations may impact our ability to manufacture, distribute, install and service our products. Any regulation of our products, whether at the federal, state, local or foreign level, including any regulations relating to the production, operation, installation, and servicing of our products may increase our costs and the price of our products, and noncompliance with applicable laws and regulations could subject us to investigations, sanctions, enforcement actions, fines, damages, civil and criminal penalties or injunctions. If any governmental sanctions are imposed, our business, operating results, and financial condition could be materially adversely affected. In addition, responding to any action will likely result in a significant diversion of management’s attention and resources and an increase in professional fees. Enforcement actions and sanctions could harm our business, operating results and financial condition.

Changes in tax laws or regulations or adverse outcomes resulting from examination of our income or other tax returns could adversely affect our operating results and financial condition.

We are subject to income taxes in the United States and various foreign jurisdictions. A number of factors may adversely affect our future effective tax rates, such as the jurisdictions in which our profits are determined to be earned and taxed; changes in the valuation of our deferred tax assets and liabilities; adjustments to estimated taxes upon finalization of various tax returns; changes in available tax credits, grants and other incentives; changes in stock-based compensation expense; the availability of loss or credit carryforwards to offset taxable income; changes in tax laws, regulations, accounting principles or interpretations thereof; or examinations by US federal, state or foreign jurisdictions that disagree with interpretations of tax rules and regulations in regard to positions taken on tax filings. A change in our effective tax rate due to any of these factors may adversely affect our future results from operations.

In addition, as our business grows, we are required to comply with increasingly complex taxation rules and practices. We are subject to tax in multiple U.S. tax jurisdictions and in foreign tax jurisdictions as we expand internationally. The development of our tax strategies requires additional expertise and may impact how we conduct our business. If our tax strategies are ineffective or we are not in compliance with domestic and international tax laws, our financial position, operating results and cash flows could be adversely affected.

E. STRATEGIC RISKS

We may be unable to establish or maintain relationships with third parties for certain aspects of continued product development, manufacturing, distribution and servicing and the supply of key components for our products.

We will need to maintain and may need to enter into additional strategic relationships in order to complete our current product development and commercialization plans. We may also require partners to assist in the sale, servicing and supply of components for our current products and anticipated products, which are in development. If we are unable to identify, enter into, and maintain satisfactory agreements with potential partners, including those relating to the supply, distribution, service and support of our current products and anticipated products, we may not be able to complete our product development and commercialization plans on schedule or at all. We may also need to scale back these plans in the absence of needed partners, which could adversely affect our future prospects for development and commercialization of future products. While we have entered into relationships with suppliers of some key components for our products, we do not know when or whether we will secure supply relationships for all required components and subsystems for our products, or whether such relationships will be on terms that will allow us to achieve our objectives. Our business prospects, results of operations and financial condition could be harmed if we fail to secure relationships with entities that can develop or supply the required components for our products and provide the required distribution and servicing support. Additionally, the agreements governing our current relationships allow for termination by our partners under certain circumstances, some of which are beyond our control. If any of our current strategic partners were to terminate any of its agreements with us, there could be a material adverse impact on the continued development and profitable

commercialization of our products and the operation of our business, financial condition, results of operations and prospects.

Potential future acquisitions could be difficult to integrate, divert the attention of key personnel, disrupt our business and impair our financial results.

As part of our business strategy, we intend to consider acquisitions of companies, technologies and products. Acquisitions, involve numerous risks, any of which could harm our business, including, difficulty in integrating the technologies, products, operations and existing contracts of a target company and realizing the anticipated benefits of the combined businesses; negative perception of the acquisition by customers, financial markets or investors; difficulty in supporting and transitioning customers, if any, of the target company; inability to achieve anticipated synergies or increase the revenue and profit of the acquired business; potential disruption of our ongoing business and distraction of management; the price we pay or other resources that we devote may exceed the value we realize; or the value we could have realized if we had allocated the purchase price or other resources to another opportunity and inability to generate sufficient revenue to offset acquisition costs. In addition, if we finance acquisitions by issuing equity securities, our existing stockholders may be diluted. As a result, if our forecasted assumptions for these acquisitions and investments are not accurate, we may not achieve the anticipated benefits of any such acquisitions, and we may incur costs in excess of what we had anticipated.

F. RISKS RELATED TO THE OWNERSHIP OF OUR COMMON STOCK

Our stock price and stock trading volume have been and could remain volatile, and the value of your investment could decline.

The market price of our common stock has historically experienced and may continue to experience significant volatility. In 2019, the sales price of our common stock fluctuated from a high of \$4.04 per share to a low of \$1.23 per share. Our progress in developing and commercializing our products, our quarterly operating results, announcements of new products by us or our competitors, our perceived prospects, changes in securities analysts' recommendations or earnings estimates, changes in general conditions in the economy or the financial markets, adverse events related to our strategic relationships, significant sales of our common stock by existing stockholders, including one or more of our strategic partners, and other developments affecting us or our competitors could cause the market price of our common stock to fluctuate substantially. In addition, in recent years, the stock market has experienced significant price and volume fluctuations. This volatility has affected the market prices of securities issued by many companies for reasons unrelated to their operating performance and may adversely affect the price of our common stock. Such market price volatility could adversely affect our ability to raise additional capital. In addition, we may be subject to securities class action litigation as a result of volatility in the price of our common stock, which could result in substantial costs and diversion of management's attention and resources and could harm our stock price, business, prospects, results of operations and financial condition.

Sales of substantial amounts of our common stock in the public markets, or the perception that such sales might occur, could reduce the price that our common stock might otherwise attain and may dilute your voting power and your ownership interest in us.

Sales of a substantial number of shares of our common stock in the public market, or the perception that such sales could occur, could adversely affect the market price of our common stock and may make it more difficult for you to sell your common stock at a time and price that you deem appropriate. As of December 31, 2019, there were approximately 43,630,020 shares of common stock issuable upon conversion of the 5.5% Convertible Senior Notes due March 2023 at a conversion price of \$2.29 per share, 15,503,876 shares of common stock issuable upon conversion of the 7.5% Convertible Senior Note due January 2023 at a conversion price of \$2.58 per share, 2,782,075 shares of common stock issuable upon conversion of the Series C Redeemable Convertible Preferred Stock at a conversion price of \$0.2343 per share, and 216,452 shares of common stock issuable upon conversion of the Series E Redeemable Preferred Stock at a conversion price of \$2.31 per share. On January 22, 2020, all outstanding shares of Series E Redeemable Preferred Stock were redeemed. In addition, as of December 31, 2019, we had outstanding options exercisable for an aggregate of 23,013,590 shares of common stock at a weighted average exercise price of \$2.48 per share and 110,573,392 shares of common stock issuable upon the exercise of warrants, 26,188,434 of which were vested as of December 31, 2019.

[Table of Contents](#)

Moreover, subject to market conditions and other factors, we may conduct future offerings of equity or debt securities. Sales of substantial amounts of our common stock in the public market, or the perception that these sales could occur, could reduce the market price of our common stock to decline. In addition, the conversion of the notes or preferred stock or the exercise of outstanding options and warrants and future equity issuances will result in dilution to investors. The market price of our common stock could fall as a result of resales of any of these shares of common stock due to an increased number of shares available for sale in the market.

If securities analysts do not publish research or reports or if they publish unfavorable or inaccurate research about our business and our stock, the price of our stock and the trading volume could decline.

We expect that the trading market for our common stock will be affected by research or reports that industry or financial analysts publish about us or our business. There are many large, well-established companies active in our industry and portions of the markets in which we compete, which may mean that we receive less widespread analyst coverage than our competitors. If one or more of the analysts who covers us downgrades their evaluations of our company or our stock, the price of our stock could decline. If one or more of these analysts cease coverage of our company, our stock may lose visibility in the market, which in turn could cause our stock price to decline.

Provisions in our charter documents and Delaware law may discourage or delay an acquisition of the Company by a third party that stockholders may consider favorable.

Our certificate of incorporation, our bylaws, and Delaware corporate law contain provisions that could have an anti-takeover effect and make it harder for a third party to acquire us without the consent of our board of directors. These provisions may also discourage proxy contests and make it more difficult for our stockholders to take some corporate actions, including the election of directors. These provisions include: the ability of our board of directors to issue shares of preferred stock in one or more series and to determine the terms of those shares, including preference and voting rights, without a stockholder vote; the exclusive right of our board of directors to elect a director to fill a vacancy created by the expansion of our board of directors or the resignation, death or removal of a director, which prevents stockholders from being able to fill vacancies on our board of directors; the inability of stockholders to call a special meeting of stockholders; the prohibition on stockholder action by written consent, which forces stockholder action to be taken at an annual or special meeting of our stockholders; advance notice requirements for nominations for election to our board of directors or for proposing matters that can be acted on by stockholders at stockholder meetings, which may discourage or deter a potential acquirer from conducting a solicitation of proxies to elect the acquirer's own slate of directors or otherwise attempting to obtain control of us; the ability of our board of directors, by majority vote, to amend the bylaws, which may allow our board of directors to take additional actions to prevent an unsolicited takeover and inhibit the ability of an acquirer to amend the bylaws to facilitate an unsolicited takeover attempt; and staggered terms for our directors, which effectively prevents stockholders from electing a majority of the directors at any one annual meeting of stockholders.

In addition, as a Delaware corporation, we are subject to Section 203 of the Delaware General Corporation Law. These provisions may prohibit large stockholders, in particular those owning 15% or more of our outstanding voting stock, from merging or combining with us for a certain period of time.

We do not anticipate paying any dividends on our common stock.

We do not anticipate paying any cash dividends on our common stock in the foreseeable future. If we do not pay cash dividends, you would receive a return on your investment in our common stock only if the market price of our common stock is greater at the time you sell your shares than the market price at the time you bought your shares.

Item 1B. Unresolved Staff Comments

There are no unresolved comments regarding our periodic or current reports from the staff of the SEC that were issued 180 days or more preceding the end of our fiscal year ended December 31, 2019.

Item 2. Properties

Our principal offices are located in Latham, New York, where we lease a 140,000 square foot facility that includes our headquarter office building, our manufacturing facility, and our primary research and development center. We lease a 830 square foot facility in Rochester, New York that includes additional office and research and development space, a 29,200 square foot facility in Spokane, Washington that includes an office building and a manufacturing facility and a 38,400 square foot manufacturing facility in Clifton Park, New York. We also lease service centers in Dayton, Ohio and Romeoville, Illinois. See Note 18, Commitments and Contingencies to the consolidated financial statements, Part II, Item 8 of this Form 10-K for further discussion of the leases. We believe that our facilities are sufficient to accommodate our anticipated production volumes for at least the next two years.

Item 3. Legal Proceedings

On August 28, 2018, a lawsuit was filed on behalf of multiple individuals against the Company and five corporate co-defendants in the 9th Judicial District Court, Rapides Parish, Louisiana. The lawsuit relates to the previously disclosed May 2018 accident involving a forklift powered by the Company's fuel cell at a Procter & Gamble facility in Louisiana. The lawsuit alleges claims against the Company and co-defendants, including Structural Composites Industries, Deep South Equipment Co., Air Products and Chemicals, Inc., and Hyster-Yale Group, Inc. for claims under the Louisiana Product Liability Act, or LPLA, including defect in construction and/or composition, design defect, inadequate warning, breach of express warranty and negligence for wrongful death and personal injuries, among other damages. Procter & Gamble has intervened in that suit to recover worker's compensation benefits paid to or for the employees/dependents. Procter & Gamble has also filed suit for property damage, business interruption, loss of revenue, expenses, and other damages. Procter & Gamble alleges theories under the LPLA, breach of warranty and quasi-contractual claims under Louisiana law. Defendants include the Company and several of the same co-defendants from the August 2018 lawsuit, including Structural Composites Industries, Deep South Equipment Co., and Hyster-Yale Group, Inc. The Company intends to vigorously defend both cases. Given the early stage of these matters, the Company is unable to determine the likelihood of an adverse outcome. While the amount of damages sought in the lawsuits is yet unspecified, the Company does not expect the lawsuits to have a material impact on the Company's financial position, liquidity or results of operations, or to otherwise have a material adverse effect on the Company.

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 Information and Holders of Record. Our common stock is traded on the NASDAQ Capital Market under the symbol “PLUG.” As of March 9, 2020, there were approximately 735 record holders of our common stock. However, management believes that a significant number of shares are held by brokers in “street name” and that the number of beneficial stockholders of our common stock exceeds 127,049.

Dividend Policy. We have never declared or paid cash dividends on our common stock and do not anticipate paying cash dividends in the foreseeable future. Any future determination as to the payment of dividends will depend upon capital requirements and limitations imposed by our credit agreements, if any, and such other factors as our board of directors may consider.

Five-Year Performance Graph. Below is a line graph comparing the percentage change in the cumulative total return of the Company’s common stock, based on the market price of the Company’s common stock, with the total return of companies included within the NASDAQ Clean Edge Green Energy Index (CELS) and the companies included within the Russell 2000 Index (RUT) for the period commencing December 31, 2014 and ending December 31, 2019. The calculation of the cumulative total return assumes a \$100 investment in the Company’s common stock, the NASDAQ Clean Edge Green Energy Index (CELS) and the Russell 2000 Index (RUT) Index on December 31, 2014 and the reinvestment of all dividends, if any.



Index	2014	2015	2016	2017	2018	2019
Plug Power Inc.	\$ 100.00	\$ 70.33	\$ 40.00	\$ 78.67	\$ 41.33	\$ 105.33
NASDAQ Clean Edge Green Energy Index	\$ 100.00	\$ 92.69	\$ 89.34	\$ 116.84	\$ 101.45	\$ 141.46
Russell 2000 Index	\$ 100.00	\$ 94.29	\$ 112.65	\$ 127.46	\$ 111.94	\$ 137.80

- This graph and the accompanying text are not “soliciting material,” are not deemed filed with the SEC and are not to be incorporated by reference in any filing by us under the Securities Act or the Exchange Act, whether made before or after the date hereof and irrespective of any general incorporation language in any such filing.
- The stock price performance shown on the graph is not necessarily indicative of future price performance.
- The hypothetical investment in Plug Power Inc.’s common stock presented in the stock performance graph above is based on the closing price of the common stock on December 31, 2014.

Item 6. Selected Financial Data

The following tables set forth selected financial data and other operating information of the Company. The selected statement of operations and balance sheet data for 2019, 2018, 2017, 2016, and 2015, as set forth below are derived from the audited consolidated financial statements of the Company. The information is only a summary and you should read it in conjunction with the Company’s audited consolidated financial statements and related notes and other financial information included herein, and “Management’s Discussion and Analysis of Financial Condition and Results of Operations.”

	Year ended December 31,				
	2019	2018	2017	2016	2015
(in thousands, except share and per share data)					
Statements Of Operations:					
Net revenue (1):					
Sales of fuel cell systems and related infrastructure	\$ 149,884	\$ 107,292	\$ 62,631	\$ 39,985	\$ 78,002
Services performed on fuel cell systems and related infrastructure	25,217	22,002	16,202	17,347	13,204
Power Purchase Agreements	25,853	22,869	12,869	13,687	5,718
Fuel delivered to customers	29,099	22,469	8,167	10,916	5,075
Other	186	—	284	884	481
Net revenue	<u>\$ 230,239</u>	<u>\$ 174,632</u>	<u>\$ 100,153</u>	<u>\$ 82,819</u>	<u>\$ 102,480</u>
Cost of revenue:					
Sales of fuel cell systems and related infrastructure	\$ 96,859	\$ 84,439	\$ 54,815	\$ 29,543	\$ 67,703
Services performed on fuel cell systems and related infrastructure	28,801	23,698	19,814	19,071	21,717
Provision for loss contracts related to service	—	—	—	(1,071)	10,050
Power Purchase Agreements	40,056	36,161	31,292	16,601	5,665
Fuel delivered to customers	36,357	27,712	22,013	13,864	6,695
Other	200	—	308	865	540
Total cost of revenue	<u>\$ 202,273</u>	<u>\$ 172,010</u>	<u>\$ 128,242</u>	<u>\$ 78,873</u>	<u>\$ 112,370</u>
Gross profit (loss)	<u>\$ 27,966</u>	<u>\$ 2,622</u>	<u>\$ (28,089)</u>	<u>\$ 3,946</u>	<u>\$ (9,890)</u>
Research and development expense	33,675	33,907	28,693	21,177	14,948
Selling, general and administrative expenses	44,333	38,198	45,010	34,288	34,164
Other (expense) income, net	(35,423)	(17,849)	(25,288)	(6,360)	3,312
Loss before income taxes	<u>\$ (85,465)</u>	<u>\$ (87,332)</u>	<u>\$ (127,080)</u>	<u>\$ (57,879)</u>	<u>\$ (55,690)</u>
Income tax benefit	—	9,217	—	392	—
Net loss attributable to the Company	<u>\$ (85,465)</u>	<u>\$ (78,115)</u>	<u>\$ (127,080)</u>	<u>\$ (57,487)</u>	<u>\$ (55,690)</u>
Preferred stock dividends declared and accretion of discount	(52)	(52)	(3,098)	(104)	(105)
Net loss attributable to common stockholders	<u>\$ (85,517)</u>	<u>\$ (78,167)</u>	<u>\$ (130,178)</u>	<u>\$ (57,591)</u>	<u>\$ (55,795)</u>
Loss per share, basic and diluted	<u>\$ (0.36)</u>	<u>\$ (0.36)</u>	<u>\$ (0.60)</u>	<u>\$ (0.32)</u>	<u>\$ (0.32)</u>
Weighted average number of common stock outstanding	<u>237,152,780</u>	<u>218,882,337</u>	<u>216,343,985</u>	<u>180,619,860</u>	<u>176,067,231</u>
Balance Sheet Data:					
<i>(at end of the period)</i>					
Unrestricted cash and cash equivalents	\$ 139,496	\$ 38,602	\$ 24,828	\$ 46,014	\$ 63,961
Total assets (2)	771,184	390,326	270,810	240,832	209,456
Noncurrent liabilities (2)	484,564	209,600	80,734	79,637	40,861
Stockholders’ equity	134,679	2,713	73,646	85,088	124,736
Working capital	162,549	9,245	3,886	44,448	88,524

(1) During the fourth quarter of 2019, the Company early-adopted Accounting Standards Update 2019-08, Compensation – Stock Compensation (Topic 718) and Revenue from Contracts with Customers (Topic 606) (ASU 2019-08) with retrospective adoption as of January 1, 2019 resulting in changes to previously reported 2019 interim financial information.

(2) Effective January 1, 2018, the Company early adopted ASC Topic 842, Leases (ASC Topic 842). The most significant impact was the recognition of right of use assets and finance obligations for operating leases on the consolidated balance sheet, as well as recognition of gross profit on sale/leaseback transactions. See Note 2, Summary of Significant Accounting Policies to the consolidated financial statements.

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

The discussion contained in this Form 10-K contains "forward-looking statements," within the meaning of Section 27A of the Securities Act and Section 21E of the Exchange Act, that involve risks and uncertainties. Our actual results could differ materially from those discussed in this Form 10-K. In evaluating these statements, you should review Part I, Forward-Looking Statements, Part I, Item 1A: Risk Factors and our consolidated financial statements and notes thereto included in Part II, Item 8: Financial Statements and Supplementary Data of this Form 10-K.

Overview

As a leading provider of comprehensive hydrogen fuel cell turnkey solutions, Plug Power is seeking to build a green hydrogen economy. The Company is focused on hydrogen and fuel cell systems that are used to power electric motors primarily in the electric mobility and stationary power markets, given the ongoing paradigm shift in the power, energy, and transportation industries to address climate change, energy security, and meet sustainability goals. Plug Power created the first commercially viable market for hydrogen fuel cell, or the HFC technology. As a result, the Company has deployed over 30,000 fuel cell systems, and has become the largest buyer of liquid hydrogen, having built and operated a hydrogen network across North America.

We are focused on proton exchange membrane, or PEM, fuel cell and fuel processing technologies, fuel cell/battery hybrid technologies, and associated hydrogen storage and dispensing infrastructure from which multiple products are available. A fuel cell is an electrochemical device that combines hydrogen and oxygen to produce electricity and heat without combustion. Hydrogen is derived from hydrocarbon fuels such as liquid petroleum gas, or LPG, natural gas, propane, methanol, ethanol, gasoline or biofuels. Plug Power develops complete hydrogen generation, delivery, storage and refueling solutions for customer locations. Currently, the Company obtains the majority of its hydrogen by purchasing it from fuel suppliers for resale to customers.

We provide and continue to develop commercially-viable hydrogen and fuel cell solutions for industrial mobility applications (including electric forklifts and electric industrial vehicles) at multi-shift high volume manufacturing and high throughput distribution sites where we believe our products and services provide a unique combination of productivity, flexibility and environmental benefits. Additionally, we manufacture and sell fuel cell products to replace batteries and diesel generators in stationary backup power applications. These products have proven valuable with telecommunications, transportation and utility customers as robust, reliable and sustainable power solutions.

Our current products and services include:

GenDrive: GenDrive is our hydrogen fueled PEM fuel cell system providing power to material handling electric vehicles, including class 1, 2, 3 and 6 electric forklifts and ground support equipment;

GenFuel: GenFuel is our hydrogen fueling delivery, generation, storage and dispensing system;

GenCare: GenCare is our ongoing 'internet of things'-based maintenance and on-site service program for GenDrive fuel cell systems, GenSure fuel cell systems, GenFuel hydrogen storage and dispensing products and ProGen fuel cell engines;

GenSure: GenSure is our stationary fuel cell solution providing scalable, modular PEM fuel cell power to support the backup and grid-support power requirements of the telecommunications, transportation, and utility sectors;

GenKey: GenKey is our vertically integrated "turn-key" solution combining either GenDrive or GenSure fuel cell power with GenFuel fuel and GenCare aftermarket service, offering complete simplicity to customers transitioning to fuel cell power; and

ProGen: ProGen is our fuel cell stack and engine technology currently used globally in mobility and stationary fuel cell systems, and as engines in electric delivery vans.

We provide our products worldwide through our direct product sales force, and by leveraging relationships with original equipment manufacturers, and their dealer networks. We manufacture our commercially-viable products in Latham, NY and Spokane, WA.

To promote fuel cell adoption and maintain post-sale customer satisfaction, we offer a range of service and support options through extended maintenance contracts. Additionally, customers may waive our service option, and choose to service their systems independently. Substantially all of our fuel cells sold in recent years were bundled with maintenance contracts.

We were organized as a corporation in the State of Delaware on June 27, 1997.

Results of Operations

Our primary sources of revenue are from sales of fuel cell systems and related infrastructure, services performed on fuel cell systems and related infrastructure, Power Purchase Agreements, or PPAs, and fuel delivered to customers. Revenue from sales of fuel cell systems and related infrastructure represents sales of our GenDrive units, GenSure stationary backup power units, as well as hydrogen fueling infrastructure. Revenue from services performed on fuel cell systems and related infrastructure represents revenue earned on our service and maintenance contracts and sales of spare parts. Revenue from PPAs primarily represents payments received from customers who make monthly payments to access the Company's GenKey solution. Revenue associated with fuel delivered to customers represents the sale of hydrogen to customers that has been purchased by the Company from a third party or generated on site.

Information pertaining to fiscal year 2017 was included in the Company's Annual Report on Form 10-K for the year ended December 31, 2018 starting on page 21 under Part II, Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations," which was filed with the SEC on March 12, 2019. Such information is hereby incorporated by reference into this "Management's Discussion and Analysis of Financial Condition and Results of Operations."

In 2017, in separate transactions, the Company issued to each of Amazon and Walmart warrants to purchase shares of the Company's common stock. The Company recorded a portion of the estimated fair value of the warrants as a reduction of revenue based upon the projected number of shares of common stock expected to vest under the warrants, the proportion of purchases by Amazon, Walmart and their affiliates within the period relative to the aggregate purchase levels required for vesting of the respective warrants, and the then-current fair value of the warrants. During the fourth quarter of 2019, the Company adopted ASU 2019-08, with retrospective adoption as of January 1, 2019. As a result, the amount recorded as a reduction of revenue was measured based on the grant-date fair value of the warrants. Previously, this amount was measured based on vesting date fair value with estimates of fair value determined at each financial reporting date for unvested warrant shares considered to be probable of vesting. Except for the third tranche, all existing unvested warrants are using a measurement date January 1, 2019, the adoption date, in accordance ASU 2019-08. For the third tranche, the exercise price will be determined once the second tranche vests. The measurement date will be determined at that time.

The amount of provision for common stock warrants recorded as a reduction of revenue during the years ended December 31, 2019 and 2018, respectively, is shown in the table below (in thousands):

	<u>Year ended December 31,</u>	
	<u>2019</u>	<u>2018</u>
Sales of fuel cell systems and related infrastructure	\$ (2,037)	\$ (4,877)
Services performed on fuel cell systems and related infrastructure	(814)	(1,951)
Power Purchase Agreements	(1,465)	(262)
Fuel delivered to customers	(2,197)	(3,100)
Total	<u>\$ (6,513)</u>	<u>\$ (10,190)</u>

Revenue, cost of revenue, gross profit/(loss) and gross margin for the years ended December 31, 2019 and 2018, were as follows (in thousands):

	<u>Year Ended</u>				<u>Year Ended</u>			
	<u>December 31, 2019</u>				<u>December 31, 2018</u>			
	<u>Net</u>	<u>Cost of</u>	<u>Gross</u>	<u>Gross</u>	<u>Net</u>	<u>Cost of</u>	<u>Gross</u>	<u>Gross</u>
	<u>Revenue</u>	<u>Revenue</u>	<u>Profit/(Loss)</u>	<u>Margin</u>	<u>Revenue</u>	<u>Revenue</u>	<u>Profit/(Loss)</u>	<u>Margin</u>
Sales of fuel cell systems and related infrastructure	\$ 149,884	\$ 96,859	\$ 53,025	35.4 %	\$ 107,292	\$ 84,439	\$ 22,853	21.3 %
Services performed on fuel cell systems and related infrastructure	25,217	28,801	(3,584)	(14.2)%	22,002	23,698	(1,696)	(7.7)%
Power Purchase Agreements	25,853	40,056	(14,203)	(54.9)%	22,869	36,161	(13,292)	(58.1)%
Fuel delivered to customers	29,099	36,357	(7,258)	(24.9)%	22,469	27,712	(5,243)	(23.3)%
Other	186	200	(14)	(7.5)%	—	—	—	—
Total	<u>\$ 230,239</u>	<u>\$ 202,273</u>	<u>\$ 27,966</u>	<u>12.1 %</u>	<u>\$ 174,632</u>	<u>\$ 172,010</u>	<u>\$ 2,622</u>	<u>1.5 %</u>

Net Revenue

Revenue – sales of fuel cell systems and related infrastructure. Revenue from sales of fuel cell systems and related infrastructure represents revenue from the sale of our fuel cells, such as GenDrive units and GenSure stationary backup power units, as well as hydrogen fueling infrastructure referred to at the site level as hydrogen installations.

Revenue from sales of fuel cell systems and related infrastructure for the year ended December 31, 2019 increased \$42.6 million, or 39.7%, to \$149.9 million from \$107.3 million for the year ended December 31, 2018. Included within revenue was provision for common stock warrants of \$2.0 million and \$4.9 million for the years ended December 31, 2019 and 2018, respectively. The main drivers for the increase in revenue were the increase in GenDrive units recognized as revenue, change in product mix and variations in customer programs, as well as a decrease in the aforementioned provision for common stock warrants. There were 6,058 GenDrive units recognized as revenue during the year ended December 31, 2019, compared to 4,426 for the year ended December 31, 2018. The increase in GenDrive revenue was partially offset by a decrease in hydrogen fueling infrastructure installations. There were 12 sites associated with hydrogen fueling infrastructure revenue during the year ended December 31, 2019, compared to 17 during the year ended December 31, 2018.

Revenue – services performed on fuel cell systems and related infrastructure. Revenue from services performed on fuel cell systems and related infrastructure represents revenue earned on our service and maintenance contracts and sales of spare parts.

Revenue from services performed on fuel cell systems and related infrastructure for the year ended December 31, 2019 increased \$3.2 million, or 14.6%, to \$25.2 million from \$22.0 million for the year ended December 31, 2018. Included within revenue from services was provision for common stock warrants of \$0.8 million and \$2.0 million for the years ended December 31, 2019 and 2018, respectively, contributing to the increase in revenue. The average number of units under extended maintenance contracts during year ended December 31, 2019 was 11,485, compared to 11,035 during the year ended December 31, 2018. This increase in the average number of units serviced in 2019 coupled with favorable changes in mix drove the increase in revenue during the period.

Revenue – Power Purchase Agreements. Revenue from PPAs represents payments received from customers for power generated through the provision of equipment and service. The equipment and service are associated with sale/leaseback transactions in which the Company sells fuel cell systems and related infrastructure to a third party, leases them back and operates them at customers' locations who are parties to PPAs with the Company. Alternatively, the Company can retain the equipment as leased property and provide it to customers under PPAs.

Revenue from PPAs for the year ended December 31, 2019 increased \$3.0 million, or 13.0%, to \$25.9 million from \$22.9 million for the year ended December 31, 2018. Included within revenue was provision for common stock warrants of \$1.5 million and \$0.3 million for the years ended December 31, 2019 and 2018, respectively. The increase in revenue from PPAs for the year ended December 31, 2019 as compared to the year ended December 31, 2018 was attributable to the increase in the number of units under PPA arrangements, partially offset by the increase in provision for common stock warrants. The remaining increase was due to the increased number of sites the Company had deployed under PPA arrangements. The average number of sites under PPA arrangements was 39 in 2019, as compared to 33 in 2018. The 18.2% increase in the average number of sites under PPA arrangements for the year December 31, 2019 compared to the year ended December 31, 2018 was relatively consistent with the increase in revenue during the same period, partially offset by the increase in provision for common stock warrants.

Revenue – fuel delivered to customers. Revenue associated with fuel delivered to customers represents the sale of hydrogen to customers that has been purchased by the Company from a third party. As part of the GenKey solution, the Company contracts with fuel suppliers to purchase liquid hydrogen, which is then sold to its customers. At December 31, 2019, there were 76 sites associated with fuel contracts, as compared to 72 at December 31, 2018. The sites generally are the same as those which had purchased hydrogen installations within the GenKey solution.

Revenue associated with fuel delivered to customers for the year ended December 31, 2019 increased \$6.6 million, or 29.5%, to \$29.1 million from \$22.5 million for the year ended December 31, 2018. Included within revenue was provision for common stock warrants of \$2.2 million and \$3.1 million for the years ended December 31, 2019 and 2018, respectively, contributing to the increase in revenue. The remaining increase in revenue was primarily due to an increase in sites taking fuel deliveries in 2019, compared to 2018, as well as an increase in the price of fuel. The average

number of sites receiving fuel deliveries was 74 for the year ended December 31, 2019, as compared to 68 for the year ended December 31, 2018.

Cost of Revenue

Cost of revenue – sales of fuel cell systems and related infrastructure. Cost of revenue from sales of fuel cell systems and related infrastructure includes direct materials, labor costs, and allocated overhead costs related to the manufacture of our fuel cells such as GenDrive units and GenSure stationary backup power units, as well as hydrogen fueling infrastructure referred to at the site level as hydrogen installations.

Cost of revenue from sales of fuel cell systems and related infrastructure for the year ended December 31, 2019 increased \$12.4 million, or 14.7%, to \$96.9 million, compared to \$84.4 million for the year ended December 31, 2018. This increase was primarily driven by an increase in the number of GenDrive units recognized as revenue, partially offset by the decrease in hydrogen infrastructure installations recognized as revenue. There were 6,058 GenDrive units recognized as revenue during the year ended December 31, 2019, compared to 4,426 for the year ended December 31, 2018. There were 12 sites associated with hydrogen fueling infrastructure revenue for the year ended December 31, 2019 compared to 17 for the year ended December 31, 2018. Gross margin generated from sales of fuel cell systems and related infrastructure was 35.4% for the year ended December 31, 2019, up from 21.3% for the year ended December 31, 2018, primarily due to an increase in GenDrive units recognized as revenue and decrease in the number of hydrogen infrastructure sites deployed, as well as a reduction of provision for common stock warrants. The provision for common stock warrants from sales of fuel cells and related infrastructure for the years ended December 31, 2019 and 2018 had a 1.3% and 4.4% negative impact on revenue, respectively.

Cost of revenue – services performed on fuel cell systems and related infrastructure. Cost of revenue from services performed on fuel cell systems and related infrastructure includes the labor, material costs and allocated overhead costs incurred for our product service and hydrogen site maintenance contracts and spare parts.

Cost of revenue from services performed on fuel cell systems and related infrastructure for the year ended December 31, 2019 increased \$5.1 million, or 21.5%, compared to \$23.7 million for the year ended December 31, 2018. Gross margin declined to (14.2%) for the year ended December 31, 2019 compared to (7.7%) for the year ended December 31, 2018 primarily due to program investments targeting performance improvement and variation in maintenance cycles.

Cost of revenue – Power Purchase Agreements. Cost of revenue from PPAs includes payments made to financial institutions for leased equipment, depreciation of leased property, and related service costs. Leased units are primarily associated with sale/leaseback transactions in which the Company sells fuel cell systems and related infrastructure to a third party, leases them back, and operates them at customers' locations that are parties to PPAs with the Company. In some instances, the Company will hold the equipment and finance it under other arrangements, such as finance leases. For those situations, the Company recognizes the depreciation and service cost of the assets as cost of revenue from PPAs.

Cost of revenue from PPAs for the year ended December 31, 2019 increased \$3.9 million, or 10.8%, to \$40.1 million from \$36.2 million for the year ended December 31, 2018. The increase was a result of an increase in the number of customer sites party to these agreements. Gross margin improved to (54.9%) for the year ended December 31, 2019 compared to (58.1%) for the year ended December 31, 2018, primarily due to an increase in leased units subject to sale/leaseback agreements with third party financial institutions and associated service cost improvements as we add units, which results in improved service cost per unit.

Cost of revenue – fuel delivered to customers. Cost of revenue from fuel delivered to customers represents the purchase of hydrogen from suppliers that ultimately is sold to customers. As part of the GenKey solution, the Company contracts with fuel suppliers to purchase liquid hydrogen and separately sells it to its customers when delivered or dispensed. At December 31, 2019, there were 76 sites associated with fuel contracts, as compared to 72 at December 31, 2018. The sites generally are the same as those which had purchased hydrogen installations within the GenKey solution.

Cost of revenue from fuel delivered to customers for the year ended December 31, 2019 increased \$8.6 million, or 31.2%, to \$36.4 million from \$27.7 million for the year ended December 31, 2018. The increase was due primarily to higher volume of liquid hydrogen delivered to customer sites as a result of an increase in the number of hydrogen installations completed under GenKey agreements and higher fuel costs. Gross margin declined to (24.9%) during the year ended December 31, 2019 compared to (23.3%) during the year ended December 31, 2018 primarily due to an increase

[Table of Contents](#)

in fuel costs and depreciation on tanks and related fuel equipment due to investments made to improve fuel system efficiency, partially offset by a decrease in provision for common stock warrants. The provision for common stock warrants from fuel delivered to customers for the year ended December 31, 2019 and 2018 had a 7.0% and 12.1% negative impact on revenue, respectively.

Expenses

Research and development expense. Research and development expense includes: materials to build development and prototype units, cash and non-cash compensation and benefits for the engineering and related staff, expenses for contract engineers, fees paid to consultants for services provided, materials and supplies consumed, facility related costs such as computer and network services, and other general overhead costs associated with our research and development activities.

Research and development expense for the year ended December 31, 2019 was relatively unchanged, as it decreased \$232 thousand, or 0.7%, to \$33.7 million from \$33.9 million for the year ended December 31, 2018.

Selling, general and administrative expenses. Selling, general and administrative expenses includes cash and non-cash compensation, benefits, amortization of intangible assets, and related costs in support of our general corporate functions, including general management, finance and accounting, human resources, selling and marketing, information technology and legal services.

Selling, general and administrative expenses for the year ended December 31, 2019 increased \$6.1 million, or 16.1%, to \$44.3 million from \$38.2 million for the year ended December 31, 2018. This increase was primarily related to an increase in performance and stock-based compensation during the year ended December 31, 2019, and by a decrease in the legal accrual during the year ended December 31, 2018.

Interest and other expense, net. Interest and other expense, net consists of interest and other expenses related to our long-term debt, convertible senior notes, obligations under finance leases and our finance obligations, as well as foreign currency exchange losses, offset by interest and other income consisting primarily of interest earned on our cash and cash equivalents, restricted cash, foreign currency exchange gains and other income. The Company entered into a series of finance leases with Generate Lending LLC during 2018. Approximately \$50.0 million of these finance leases were terminated and replaced with long-term debt with Generate Lending LLC in March 2019. Additionally, in September of 2019 and March of 2018, the Company issued convertible senior notes in a private placement to qualified institutional buyers pursuant to Rule 144A under the Securities Act.

Net interest and other expense for the year ended December 31, 2019, increased \$13.4 million or 60.4%, as compared to the year ended December 31, 2018. This increase was attributed to the increase in finance leases/long-term debt during 2019 and the issuance of convertible senior notes in September 2019 and March of 2018, as mentioned above.

Common Stock Warrant Liability

Change in fair value of common stock warrant liability. The Company accounts for common stock warrants as common stock warrant liability with changes in the fair value reflected in the consolidated statement of operations as change in the fair value of common stock warrant liability.

The change in fair value of common stock warrant liability for the year ended December 31, 2019 resulted in a decrease in the associated warrant liability of \$79 thousand as compared to a decrease of \$4.3 million for the year ended December 31, 2018. These variances were primarily due to changes in the average remaining term of the warrants, an increase in Company's common stock price, and changes in volatility of our common stock, which are significant inputs to the Black-Scholes valuation model used to calculate the fair value of these warrants at each financial reporting date. All of these warrants were exercised on October 15, 2019 for net proceeds of \$14.1 million.

Income Tax

Income taxes. The deferred tax asset generated from our net operating loss has been offset by a full valuation allowance because it is more likely than not that the tax benefits of the net operating loss carry forward will not be realized.

[Table of Contents](#)

The Company recognized an income tax benefit for the years ended December 31, 2019 and 2018 of zero and \$9.2 million, respectively. The 2018 income tax benefit resulted from the intraperiod tax allocation rules under ASC Topic 740-20, *Intraperiod Tax Allocation*, under which the Company recognized a benefit for current losses as a result of an entry to additional paid-in capital related to the issuance of the \$100 million Convertible Senior Notes discussed in Note 10, Convertible Senior Notes. The Company has not changed its overall conclusion with respect to the need for a valuation allowance against its net deferred tax assets, which remain fully reserved.

Liquidity and Capital Resources

Liquidity

Our cash requirements relate primarily to working capital needed to operate and grow our business, including funding operating expenses, growth in inventory to support both shipments of new units and servicing the installed base, growth in equipment leased to customers under long-term arrangements, funding the growth in our GenKey “turn-key” solution, which includes the installation of our customers’ hydrogen infrastructure as well as delivery of the hydrogen fuel, continued development and expansion of our products, payment of lease/financing obligations under sale/leaseback financings, and the repayment or refinancing of our long-term debt. Our ability to achieve profitability and meet future liquidity needs and capital requirements will depend upon numerous factors, including the timing and quantity of product orders and shipments; attaining and expanding positive gross margins across all product lines; the timing and amount of our operating expenses; the timing and costs of working capital needs; the timing and costs of developing marketing and distribution channels; the ability of our customers to obtain financing to support commercial transactions; our ability to obtain financing arrangements to support the sale or leasing of our products and services to customers and to repay or refinance our long-term debt, and the terms of such agreements that may require us to pledge or restrict substantial amounts of our cash to support these financing arrangements; the timing and costs of developing marketing and distribution channels; the timing and costs of product service requirements; the timing and costs of hiring and training product staff; the timing and costs of product development and introductions; the extent of our ongoing and new research and development programs; and changes in our strategy or our planned activities. If we are unable to fund our operations with positive cash flows and cannot obtain external financing, we may not be able to sustain future operations. As a result, we may be required to delay, reduce and/or cease our operations and/or seek bankruptcy protection.

We have experienced and continue to experience negative cash flows from operations and net losses. The Company incurred net losses attributable to common stockholders of \$85.5 million, \$78.2 million and \$130.2 million for the years ended December 31, 2019, 2018, and 2017, respectively, and had an accumulated deficit of \$1.3 billion at December 31, 2019.

We have historically funded our operations primarily through public and private offerings of equity and debt, as well as short-term borrowings, long-term debt and project financings. The Company believes that its current working capital and cash anticipated to be generated from future operations, as well as borrowings from lending and project financing sources and proceeds from equity and debt offerings will provide sufficient liquidity to fund operations for at least one year after the date the financial statements are issued. There is no guarantee that future funding will be available if and when required or at terms acceptable to the Company. This projection is based on our current expectations regarding new project financing and product sales and service, cost structure, cash burn rate and other operating assumptions.

During the year ended December 31, 2019, net cash used in operating activities was \$51.5 million, consisting primarily of a net loss attributable to the Company of \$85.5 million, and net outflows from fluctuations in working capital and other assets and liabilities of \$7.1 million, offset by the impact of noncash charges of \$41.0 million. The changes in working capital primarily were related to decreases in accounts receivable and deferred revenue, offset by increases in inventory, prepaid expenses, other current assets, accounts payable, accrued expenses, and other liabilities. Cash outflows related to equipment that we sell are included in net cash used on operating activities. As of December 31, 2019, we had cash and cash equivalents of \$139.5 million and net working capital of \$162.5 million. By comparison, at December 31, 2018, we had cash and cash equivalents of \$38.6 million and net working capital of \$9.2 million.

Net cash used in investing activities for the year ended December 31, 2019, totaled \$14.2 million and included purchases of property, plant and equipment and intangible assets and outflows associated with materials, labor, and overhead necessary to construct new leased property. Cash outflows related to equipment that we lease directly to customers are included in net cash used in investing activities. Net cash provided by financing activities for the year ended December 31, 2019 totaled \$325.1 million and primarily resulted from the net proceeds from the issuance of preferred

[Table of Contents](#)

stock and warrants of \$14.1 million, net proceeds from public offerings of our equity of \$158.4 million, proceeds from the exercise of stock options of \$1.2 million, net proceeds of \$39.1 million from the issuance of the \$40 million Convertible Senior Note, proceeds from the issuance of long-term debt of \$119.2 million and increase in finance obligations of \$83.7 million, offset by payments for redemption of preferred stock of \$4.0 million and repayments of long-term debt of \$24.8 million and finance obligations of \$61.7 million.

Public and Private Offerings of Equity and Debt

Common Stock Issuance

On April 3, 2017, the Company entered into an At Market Issuance Sales Agreement, or the Sales Agreement, with FBR Capital Markets & Co. (now B. Riley FBR, Inc.), or FBR, as sales agent, pursuant to which the Company may offer and sell, from time to time through FBR, shares of common stock par value \$0.01 per share having an aggregate offering price of up to \$75.0 million. During the year ended December 31, 2019, the Company issued 6.3 million shares of common stock through its Sales Agreement resulting in net proceeds of \$14.5 million. As of December 2, 2019, the Company had raised a total of \$46.8 million during the term of the Sales Agreement. On December 2, 2019, the Sales Agreement expired.

In December 2019, the Company sold 46 million shares of common stock at a public price of \$2.75 per share for net proceeds of approximately \$120.4 million.

In March 2019, the Company sold 10 million shares of common stock at a purchase price of \$2.35 per share for net proceeds of \$23.5 million.

Preferred Stock Issuance

In November 2018, the Company completed a private placement of an aggregate of 35,000 shares of the Company's Series E Redeemable Convertible Preferred Stock, par value \$0.01 per share, or the Series E Preferred Stock, for net proceeds of approximately \$30.9 million. In the third quarter of 2019, the Company redeemed 4,038 shares of Series E Preferred Stock totaling \$4.0 million. In the fourth quarter of 2019, the Company converted 30,962 shares of Series E Preferred Stock into 13.8 million shares of common stock. In January 2020, the Company converted the remainder of the 500 shares of Series E Preferred Stock into 216 thousand shares of common stock. See Note 12, Redeemable Convertible Preferred Stock, for additional information.

Debt

In September 2019, the Company issued a \$40.0 million in aggregate principal amount of 7.5% convertible senior note due in 2023, which we refer to herein as the \$40 million Convertible Senior Note. The Company's total obligation, net of interest accretion, due to the holder is \$48.0 million. The total net proceeds from this offering, after deducting costs of the issuance were \$39.1 million. As of December 31, 2019, the outstanding balance of the note, net of related discount and issuance costs, was \$39.6 million. See Note 10, Convertible Senior Notes, for more details.

In March 2018, the Company issued \$100.0 million in aggregate principal amount of 5.5% convertible senior notes due in 2023, which we refer to herein as the \$100 million Convertible Senior Notes. The total net proceeds from this offering, after deducting costs of the issuance, were approximately \$95.9 million. Approximately \$43.5 million of the proceeds were used for the cost of the Capped Call and the Common Stock Forward, both of which are hedges related to the \$100 million Convertible Senior Notes. As of December 31, 2019, the outstanding balance of the notes, net of related accretion and issuance costs, was \$70.6 million. See Note 10, Convertible Senior Notes, for more details.

On April 12, 2017, the Company issued to Tech Opportunities LLC (Tech Opps) warrants to acquire up to 5,250,750 shares of common stock at an exercise price of \$2.69 per share. All of these warrants were exercised on October 15, 2019 for net proceeds of \$14.1 million. See Note 11, Stockholders' Equity, for additional information.

Operating or Finance Leases

The Company enters into sale/leaseback agreements with various financial institutions to facilitate the Company's commercial transactions with key customers. The Company sells certain fuel cell systems and hydrogen infrastructure to the financial institutions and leases the equipment back to support certain customer locations and to fulfill its varied Power

[Table of Contents](#)

Purchase Agreements (PPAs). In connection with certain operating leases, the financial institutions require the Company to maintain cash balances in restricted accounts securing the Company's finance obligations. Cash received from customers under the PPAs is used to make payments against the Company's finance obligations. As the Company performs under these agreements, the required restricted cash balances are released, according to a set schedule. The total remaining lease payments to financial institutions under these agreements at December 31, 2019 was \$227.2 million, \$234.5 million of which were secured with restricted cash, security deposits and pledged service escrows.

The Company has a master lease agreement with Wells Fargo Equipment Finance, Inc. (Wells Fargo MLA) to finance the Company's commercial transactions with Wal-Mart Stores, Inc. (Walmart). The Wells Fargo MLA was entered into in 2017 and amended in 2018. Pursuant to the Wells Fargo MLA, the Company sells fuel cell systems and hydrogen infrastructure to Wells Fargo and then leases them back and operates them at Walmart sites under lease agreements with Walmart. The total remaining lease payments to Wells Fargo were \$112.8 million at December 31, 2019. Transactions completed under the Wells Fargo MLA in 2019 and 2018 were accounted for as operating leases and therefore the sales of the fuel cell systems and hydrogen infrastructure were recognized as revenue for the year ended December 31, 2019 and 2018. Transactions completed under the Wells Fargo MLA in 2017 were accounted for as finance leases. The difference in lease classification is due to changes in financing terms and their bearing on lease assessment criteria. Also included in the remaining lease payments to Wells Fargo was a sale/leaseback transaction in 2015 that was accounted for as an operating lease. In connection with the Wells Fargo MLA, the Company has a customer guarantee for a majority of the transactions. The aforementioned Wells Fargo MLA transactions required a letter of credit for the unguaranteed portion totaling \$30.7 million.

Additionally, during the third quarter of 2019, the Company entered into master lease agreements with both Key Equipment Finance (KeyBank) and SunTrust Equipment Finance & Lease Corp. (SunTrust), to finance commercial transactions with Walmart. The transactions with KeyBank and SunTrust required cash collateral for the unguaranteed portions totaling \$15.9 million. Similar to the aforementioned Wells Fargo MLA, the Company has a customer guarantee for the majority of the transactions.

During the year ended December 31, 2019, the Company entered into additional, similar master lease agreements with Wells Fargo, Crestmark Equipment Finance (Crestmark), First American Bancorp, Inc. (First American), 36th Street Capital Partners, LLC (36th Street) and Fifth Third Bank, National Association (Fifth Third) to finance subscription programs with other customers. The total remaining lease payments to these financial institutions were \$93.2 million at December 31, 2019. The majority of the lease payments are secured by cash collateral and letters of credit backed by restricted cash.

Secured Debt

In March 2019, the Company entered into a loan and security agreement with Generate Lending, LLC (Generate Capital) pursuant to which the Company borrowed \$85.0 million. The initial proceeds of the loan were used to pay in full the Company's long-term debt and accrued interest of \$17.6 million under the loan agreement with NY Green Bank, a Division of the New York State Energy Research & Development Authority (NY Green Bank) and terminate approximately \$50.3 million of certain equipment leases with Generate Plug Power SLB II, LLC as well as repurchase the associated leased equipment. In April 2019 and November 2019, the Company borrowed an additional \$15.0 million and \$20.0 million, respectively, under the Term Loan Facility with Generate Capital at 12% interest to fund working capital for ongoing deployments and other general corporate purposes. On December 31, 2019 the outstanding balance was \$112.7 million. See Note 9, Long-Term Debt for additional information.

Advances under the Term Loan Facility bear interest at 12.0% per annum. The Loan Agreement includes covenants, limitations, and events of default customary for similar facilities. The term of the loan is three years, with a maturity date of October 6, 2022. Principal payments will be funded in part by releases of restricted cash, as described in Note 18, Commitments and Contingencies.

Interest and a portion of the principal amount is payable on a quarterly basis and the entire then outstanding principal balance of the Term Loan Facility, together with all accrued and unpaid interest, is due and payable on the maturity date of October 6, 2022. The Company may also be required to pay Generate Capital additional fees of up to \$1.5 million if the Company is unable to provide \$50.0 million of structured project financing arrangements with Generate Capital prior to December 31, 2021.

[Table of Contents](#)

All obligations under the Loan Agreement are unconditionally guaranteed by Emerging Power Inc. and Emergent Power Inc. The Term Loan Facility is secured by substantially all of the Company's and the guarantor subsidiaries' assets, including, among other assets, all intellectual property, all securities in domestic subsidiaries and 65% of the securities in foreign subsidiaries, subject to certain exceptions and exclusions.

The Loan Agreement contains covenants, including, among others, (i) the provision of annual and quarterly financial statements, management rights and insurance policies and (ii) restrictions on incurring debt, granting liens, making acquisitions, making loans, paying dividends, dissolving, and entering into leases and asset sales and (iii) compliance with a collateral coverage covenant. The Loan Agreement also provides for events of default, including, among others, payment, bankruptcy, covenant, representation and warranty, change of control, judgment and material adverse effect defaults at the discretion of the lender. As of December 31, 2019, the Company is in compliance with all the covenants.

The Loan Agreement provides that if there is an event of default due to the Company's insolvency or if the Company fails to perform in any material respect the servicing requirements for fuel cell systems under certain customer agreements, which failure would entitle the customer to terminate such customer agreement, replace the Company or withhold the payment of any material amount to the Company under such customer agreement, then Generate Capital has the right to cause Proton Services Inc., a wholly owned subsidiary of the Company, to replace the Company in performing the maintenance services under such customer agreement.

The Term Loan Facility requires the principal balance at the end of each of the following years may not exceed the following (in thousands):

December 31, 2020	\$	86,159
December 31, 2021		59,373

Several key indicators of liquidity are summarized in the following table (in thousands):

	2019	2018	2017
Cash and cash equivalents at end of period	\$ 139,496	\$ 38,602	\$ 24,828
Restricted cash at end of period	230,004	71,551	43,227
Working capital at end of period	162,549	9,245	3,886
Net loss attributable to common stockholders	85,517	78,167	130,178
Net cash used in operating activities	(51,522)	(57,617)	(60,182)
Net cash used in investing activities	(14,244)	(19,572)	(44,363)
Net cash provided by financing activities	325,060	119,344	83,011

\$40 Million Convertible Senior Note

In September 2019, the Company issued a \$40.0 million in aggregate principal amount of 7.5% Convertible Senior Note due on January 5, 2023 in exchange for net proceeds of \$39.1 million, in a private placement to an accredited investor pursuant to Rule 144A under the Securities Act. There are no required principal payments prior to maturity of the note. Upon maturity of the note, the Company is required to repay 120% of \$40.0 million, or \$48.0 million. The note bears interest at 7.5% per annum, payable quarterly in arrears on January 5, April 5, July 5 and October 5 of each year beginning on October 5, 2019 and will mature on January 5, 2023 unless earlier converted or repurchased in accordance with its terms. The note is unsecured and does not contain any financial covenants or any restrictions on the payment of dividends, or the issuance or repurchase of common stock by the Company.

The note has an initial conversion rate of 387.5969, which is subject to adjustment in certain events. The initial conversion rate is equivalent to an initial conversion price of approximately \$2.58 per share of common stock. The holder of the note may convert at its option at any time until the close of business on the second scheduled trading day immediately prior to the maturity date for shares of the Company's common stock, subject to certain limitations. In addition, the note will be automatically converted if (1) the daily volume-weighted average price per share of common stock exceeds 175% of the conversion price (as described above) on each of the 20 consecutive VWAP trading days (as defined in the note) beginning after the issue date of the note and (2) certain equity conditions (as defined in the note) are satisfied. Only if both criteria are met is the note automatically converted. Upon either the voluntary or automatic conversion of the note, the Company will deliver shares of common stock based on (1) the then-effective conversion rate and (2) the original principal amount of \$40.0 million and not the maturity principal amount of \$48.0 million. The note does not allow cash

[Table of Contents](#)

settlement (entirely or partially) upon conversion. As such, the Company uses the if-converted method for calculating any potential dilutive effect of the conversion option on diluted earnings per share.

The Company concluded the conversion features did not require bifurcation. Specifically, while the Company determined that (i) the conversion features were not clearly and closely related to the host contracts, (ii) the note (i.e., hybrid instrument) is not remeasured at fair value under otherwise applicable GAAP with changes in fair value reported in earnings as they occur and (iii) the conversion features, if freestanding, would meet the definition of a derivative, the Company concluded such conversion features meet the equity scope exception, and therefore, the conversion features are not required to be bifurcated from the note.

If the Company undergoes a fundamental change prior to the maturity date, subject to certain limitations, the holder may require the Company to repurchase for cash all or a portion of the note at a cash repurchase price equal to any accrued and unpaid interest on the note (or portion thereof), plus the greater of (1) 115% of the maturity principal amount of \$48.0 million (or portion thereof) and (2) 110% of the product of (i) the conversion rate in effect as of the trading day immediately preceding the date of such fundamental change; (ii) the principal amount of the \$40.0 million note to be repurchased divided by \$1,000; and (iii) the average of the daily volume-weighted average price per share of the Company's common stock over the five consecutive VWAP trading days immediately before the effective date of such fundamental change.

In addition, with the consent of the holder of the note, subject to certain limitations, the Company may redeem all or any portion of the note, at the Company's option, at a cash redemption price equal to any accrued and unpaid interest on the note (or portion thereof), plus the greater of (1) 105% of the maturity principal amount of \$48.0 million (or portion thereof); and (2) 115% of the product of (i) the conversion rate in effect as of the trading day immediately preceding the related redemption date; (ii) the principal amount of the \$40.0 million note to be redeemed divided by \$1,000; and (iii) the arithmetic average of the daily volume-weighted average price per share of common stock over the five consecutive VWAP trading days immediately before the related redemption date.

While the Company concluded the fundamental change redemption option represents an embedded derivative, the Company concluded the value of the embedded derivative to be immaterial given the likelihood of the occurrence of a fundamental change was deemed to be remote. As related to the call option, the Company concluded the call option was clearly and closely related to the host contract, and therefore, did not meet the definition of an embedded derivative.

The Company concluded the total debt discount at issuance of the note equaled approximately \$8.0 million. This debt discount was comprised of (1) the discount of \$8.0 million attributed to the fact that upon maturity, the Company is required to repay 120% of \$40.0 million, or \$48.0 million and (2) debt issuance costs of \$1.0 million. The debt discount was recorded as debt issuance cost (presented as contra debt in the consolidated balance sheet) and is being amortized to interest expense over the term of the note using the effective interest rate method. As of December 31, 2019, the remaining life of the note was approximately 37 months.

Based on the closing price of the Company's common stock of \$3.16 on December 31, 2019, the if-converted value of the notes was greater than the principal amount. At December 31, 2019, the fair value of the note was approximately \$53.5 million. The Company utilized a Monte Carlo simulation model to estimate the fair value of the convertible debt as of December 31, 2019. The simulation model is designed to capture the potential settlement features of the convertible debt, in conjunction with simulated changes in the Company's stock price over the term of the note, incorporating a volatility assumption of 70%. This is considered a Level 3 fair value measurement.

\$100 Million Convertible Senior Notes

In March 2018, the Company issued \$100.0 million in aggregate principal amount of 5.5% Convertible Senior Notes due on March 15, 2023 in a private placement to qualified institutional buyers pursuant to Rule 144A under the Securities Act. There are no required principal payments prior to maturity of the notes.

The notes bear interest at 5.5%, payable semi-annually in cash on March 15 and September 15 of each year. The notes will mature on March 15, 2023, unless earlier converted or repurchased in accordance with their terms. The notes are unsecured and do not contain any financial covenants or any restrictions on the payment of dividends, or the issuance or repurchase of common stock by the Company.

[Table of Contents](#)

Each \$1,000 principal amount of the notes will initially be convertible into 436.3002 shares of the Company's common stock, which is equivalent to an initial conversion price of approximately \$2.29 per share, subject to adjustment upon the occurrence of specified events. Holders of these notes may convert their notes at their option at any time prior to the close of the last business day immediately preceding September 15, 2022, only under the following circumstances:

- 1) during any calendar quarter (and only during such calendar quarter), if the last reported sale price of the Company's common stock for at least 20 trading days (whether or not consecutive) during a period of 30 consecutive trading days ending on, and including, the last trading day of the immediately preceding calendar quarter is greater than or equal to 130% of the conversion price on each applicable trading day;
- 2) during the five business day period after any five consecutive trading day period (the measurement period) in which the trading price (as defined in the indenture governing the notes) per \$1,000 principal amount of notes for each trading day of the measurement period was less than 98% of the product of the last reported sale price of the Company's common stock and the conversion rate for the notes on each such trading day;
- 3) if the Company calls any or all of the notes for redemption, at any time prior to the close of business on the second scheduled trading day immediately preceding the redemption date; or
- 4) upon the occurrence of certain specified corporate events, such as a beneficial owner acquiring more than 50% of the total voting power of the Company's common stock, recapitalization of the Company, dissolution or liquidation of the Company, or the Company's common stock ceases to be listed on an active market exchange.

On or after September 15, 2022, holders may convert all or any portion of their notes at any time prior to the close of business on the second scheduled trading day immediately preceding the maturity date regardless of the foregoing conditions.

Upon conversion of the notes, the Company will pay or deliver, as the case may be, cash, shares of the Company's common stock or a combination of cash and shares of the Company's common stock, at the Company's election. While the Company plans to settle the principal amount of the notes in cash subject to available funding at time of settlement, we currently use the if-converted method for calculating any potential dilutive effect of the conversion option on diluted net income per share, subject to meeting the criteria for using the treasury stock method in future periods.

The conversion rate will be subject to adjustment in some events but will not be adjusted for any accrued or unpaid interest. Holders who convert their notes in connection with certain corporate events that constitute a "make-whole fundamental change" per the indenture governing the notes or in connection with a redemption will be, under certain circumstances, entitled to an increase in the conversion rate. In addition, if the Company undergoes a fundamental change prior to the maturity date, holders may require the Company to repurchase for cash all or a portion of its notes at a repurchase price equal to 100% of the principal amount of the repurchased notes, plus accrued and unpaid interest.

The Company may not redeem the notes prior to March 20, 2021. The Company may redeem for cash all or any portion of the notes, at the Company's option, on or after March 20, 2021 if the last reported sale price of the Company's common stock has been at least 130% of the conversion price then in effect for at least 20 trading days (whether or not consecutive), including at least one of the three trading days immediately preceding the date on which the Company provides notice of redemption, during any 30 consecutive trading day period ending on, and including, the trading day immediately preceding the date on which the Company provides notice of redemption at a redemption price equal to 100% of the principal amount of the notes to be redeemed, plus accrued and unpaid interest to, but excluding, the redemption date.

In accounting for the issuance of the notes, the Company separated the notes into liability and equity components. The initial carrying amount of the liability component of approximately \$58.2 million, net of costs incurred, was calculated by measuring the fair value of a similar liability that does not have an associated convertible feature. The carrying amount of the equity component of approximately \$37.7 million, net of costs incurred, representing the conversion option, was determined by deducting the fair value of the liability component from the par value of the notes. The difference between the principal amount of the notes and the liability component (the debt discount) is amortized to interest expense using the effective interest method over the term of the notes. The effective interest rate is approximately 16.0%. The equity component of the notes is included in additional paid-in capital in the consolidated balance sheet and is not remeasured as long as it continues to meet the conditions for equity classification.

[Table of Contents](#)

We incurred transaction costs related to the issuance of the notes of approximately \$4.1 million, consisting of initial purchasers' discount of approximately \$3.3 million and other issuance costs of \$0.9 million. In accounting for the transaction costs, we allocated the total amount incurred to the liability and equity components using the same proportions as the proceeds from the notes. Transaction costs attributable to the liability component were approximately \$2.4 million, were recorded as debt issuance cost (presented as contra debt in the consolidated balance sheet) and are being amortized to interest expense over the term of the notes. The transaction costs attributable to the equity component were approximately \$1.7 million and were netted with the equity component in stockholders' equity. As of December 31, 2019, the remaining life of the notes was approximately 39 months.

Based on the closing price of the Company's common stock of \$3.16 on December 31, 2019, the if-converted value of the notes was greater than the principal amount. At December 31, 2019, the estimated fair value of the notes was approximately \$135.3 million. The Company utilized data from market activity for this instrument near December 31, 2019, to determine the fair value of this instrument. This is considered a Level 2 fair value measurement.

Capped Call

In conjunction with the issuance of the \$100 million Convertible Senior Notes, the Company entered into capped call options, or Capped Call, on the Company's common stock with certain counterparties at a price of \$16.0 million. The net cost incurred in connection with the Capped Call has been recorded as a reduction to additional paid-in capital in the consolidated balance sheet.

The Capped Call is generally expected to reduce or offset the potential dilution to the Company's common stock upon any conversion of the \$100 million Convertible Senior Notes and/or offset any cash payments the Company is required to make in excess of the principal amount of the converted notes, as the case may be, with such reduction and/or offset subject to a cap based on the cap price. The cap price of the Capped Call transactions will initially be \$3.82 per share, which represents a premium of 100% over the last reported sale price of the Company's common stock of \$1.91 per share on the date of the transaction, and is subject to certain adjustments under the terms of the Capped Call. The Capped Call becomes exercisable if the conversion option is exercised.

By entering into the Capped Call, the Company expects to reduce the potential dilution to its common stock (or, in the event the conversion is settled in cash, to provide a source of cash to settle a portion of its cash payment obligation) in the event that at the time of conversion its stock price exceeds the conversion price under the \$100 million Convertible Senior Notes.

Common Stock Forward

In connection with the sale of the \$100 million Convertible Senior Notes, the Company also entered into a forward stock purchase transaction (Common Stock Forward), pursuant to which the Company agreed to purchase 14,397,906 shares of its common stock for settlement on or about March 15, 2023. The number of shares of common stock that the Company will ultimately repurchase under the Common Stock Forward is subject to customary anti-dilution adjustments. The Common Stock Forward is subject to early settlement or settlement with alternative consideration in the event of certain corporate transactions.

The net cost incurred in connection with the Common Stock Forward of \$27.5 million has been recorded as an increase in treasury stock in the consolidated balance sheet. The related shares were accounted for as a repurchase of common stock.

The fair values of the Capped Call and Common Stock Forward are not remeasured each reporting period.

Amazon Transaction Agreement

On April 4, 2017, the Company and Amazon entered into a Transaction Agreement (the Amazon Transaction Agreement), pursuant to which the Company agreed to issue to Amazon.com NV Investment Holdings LLC, a wholly owned subsidiary of Amazon, warrants to acquire up to 55,286,696 shares of the Company's common stock (the Amazon Warrant Shares), subject to certain vesting events described below. The Company and Amazon entered into the Amazon Transaction Agreement in connection with existing commercial agreements between the Company and Amazon with respect to the deployment of the Company's GenKey fuel cell technology at Amazon distribution centers. The existing

[Table of Contents](#)

commercial agreements contemplate, but do not guarantee, future purchase orders for the Company's fuel cell technology. The vesting of the Amazon Warrant Shares is linked to payments made by Amazon or its affiliates (directly or indirectly through third parties) pursuant to the existing commercial agreements.

The majority of the Amazon Warrant Shares will vest based on Amazon's payment of up to \$600.0 million to the Company in connection with Amazon's purchase of goods and services from the Company. The first tranche of 5,819,652 Amazon Warrant Shares vested upon the execution of the Amazon Transaction Agreement. Accordingly, \$6.7 million, the fair value of the first tranche of Amazon Warrant Shares, was recognized as selling, general and administrative expense on the consolidated statements of operations during 2017. All future provision for common stock warrants will be recorded in revenue. The second tranche of 29,098,260 Amazon Warrant Shares will vest in four installments of 7,274,565 Amazon Warrant Shares each time Amazon or its affiliates, directly or indirectly through third parties, make an aggregate of \$50.0 million in payments for goods and services to the Company, up to payments totaling \$200.0 million in the aggregate. The exercise price for the first and second tranches of Amazon Warrant Shares will be \$1.1893 per share. After Amazon has made payments to the Company totaling \$200.0 million, the third tranche of 20,368,784 Amazon Warrant Shares will vest in eight installments of 2,546,098 Amazon Warrant Shares each time Amazon or its affiliates, directly or indirectly through third parties, make an aggregate of \$50.0 million in payments for goods and services to the Company, up to payments totaling \$400.0 million in the aggregate. The exercise price of the third tranche of Amazon Warrant Shares will be an amount per share equal to ninety percent (90%) of the 30-day volume weighted average share price of the common stock as of the final vesting date of the second tranche of Amazon Warrant Shares. The Amazon Warrant Shares are exercisable through April 4, 2027.

The Amazon Warrant Shares provide for net share settlement that, if elected by the holders, will reduce the number of shares issued upon exercise to reflect net settlement of the exercise price. The Amazon Warrant Shares provide for certain adjustments that may be made to the exercise price and the number of shares of common stock issuable upon exercise due to customary anti-dilution provisions based on future events. These warrants are classified as equity instruments.

As of January 1, 2019, the Company's adoption of ASU 2019-08 requires these share-based payment awards granted to a customer to be measured and classified by applying the guidance of ASC Topic 718.

As a result, the amount recorded as a reduction in revenue is measured based on the grant-date fair value of the Amazon Warrant Shares, as opposed to the vesting date. The transition guidance of ASU 2019-08 specifies that equity instruments that are unvested and subject to its guidance as of the adoption date are to be measured at the adoption date fair value. See Equity Instruments in Note 2, Summary of Significant Accounting Policies for further information regarding the impact of adoption of ASU 2019-08.

At both December 31, 2019 and 2018, 20,368,782 of the Amazon Warrant Shares had vested. The amount of provision for common stock warrants recorded as a reduction of revenue for the Amazon Warrant during the years ended December 31, 2019 and 2018 was \$4.1 million and \$9.8 million, respectively.

Walmart Transaction Agreement

On July 20, 2017, the Company and Walmart entered into a Transaction Agreement (the Walmart Transaction Agreement), pursuant to which the Company agreed to issue to Walmart a warrant to acquire up to 55,286,696 shares of the Company's common stock, subject to certain vesting events (the Walmart Warrant Shares). The Company and Walmart entered into the Walmart Transaction Agreement in connection with existing commercial agreements between the Company and Walmart with respect to the deployment of the Company's GenKey fuel cell technology across various Walmart distribution centers. The existing commercial agreements contemplate, but do not guarantee, future purchase orders for the Company's fuel cell technology. The vesting of the warrant shares is linked to payments made by Walmart or its affiliates (directly or indirectly through third parties) pursuant to transactions entered into after January 1, 2017 under existing commercial agreements.

The majority of the Walmart Warrant Shares will vest based on Walmart's payment of up to \$600.0 million to the Company in connection with Walmart's purchase of goods and services from the Company. The first tranche of 5,819,652 Walmart Warrant Shares vested upon the execution of the Walmart Transaction Agreement. Accordingly, \$10.9 million, the fair value of the first tranche of Walmart Warrant Shares, was recorded as a provision for common stock warrants and presented as a reduction to revenue on the consolidated statements of operations during 2017. All future

[Table of Contents](#)

provision for common stock warrants will be recorded in revenue. The second tranche of 29,098,260 Walmart Warrant Shares will vest in four installments of 7,274,565 Walmart Warrant Shares each time Walmart or its affiliates, directly or indirectly through third parties, make an aggregate of \$50.0 million in payments for goods and services to the Company, up to payments totaling \$200.0 million in the aggregate. The exercise price for the first and second tranches of Walmart Warrant Shares will be \$2.1231 per share. After Walmart has made payments to the Company totaling \$200.0 million, the third tranche of 20,368,784 Walmart Warrant Shares will vest in eight installments of 2,546,098 Walmart Warrant Shares each time Walmart or its affiliates, directly or indirectly through third parties, make an aggregate of \$50.0 million in payments for goods and services to the Company, up to payments totaling \$400.0 million in the aggregate. The exercise price of the third tranche of Walmart Warrant Shares will be an amount per share equal to ninety percent (90%) of the 30-day volume weighted average share price of the common stock as of the final vesting date of the second tranche of Walmart Warrant Shares, provided that, with limited exceptions, the exercise price for the third tranche will be no lower than \$1.1893. The Walmart Warrant Shares are exercisable through July 20, 2027.

The Walmart Warrant Shares provide for net share settlement that, if elected by the holders, will reduce the number of shares issued upon exercise to reflect net settlement of the exercise price. The Walmart Warrant Shares provide for certain adjustments that may be made to the exercise price and the number of shares of common stock issuable upon exercise due to customary anti-dilution provisions based on future events. These warrants are classified as equity instruments.

As of January 1, 2019, the Company's adoption of ASU 2019-08 requires these share-based payment awards granted to a customer to be measured and classified by applying the guidance of ASC Topic 718.

As a result, the amount recorded as a reduction in revenue is measured based on the grant-date fair value of the Walmart Warrant Shares, as opposed to the vesting date. The transition guidance of ASU 2019-08 specifies that equity instruments that are unvested and subject to its guidance as of the adoption date are to be measured at the adoption date fair value. See Equity Instruments in Note 2, Summary of Significant Accounting Policies for further information regarding the impact of adoption of ASU 2019-08.

At both December 31, 2019 and 2018, 5,819,652 of the Walmart Warrant Shares had vested. The amount of provision for common stock warrants recorded as a reduction of revenue for the Walmart Warrant during the years ended December 31, 2019 and 2018 was \$2.4 million and \$0.4 million, respectively.

Lessor Obligations

As of December 31, 2019, the Company had noncancelable operating leases (as lessor), primarily associated with assets deployed at customer sites. These leases expire over the next one to seven years. Leases contain termination clauses with associated penalties, the amount of which cause the likelihood of cancellation to be remote.

Future minimum lease payments under noncancelable operating leases (with initial or remaining lease terms in excess of one year) as of December 31, 2019 were as follows (in thousands):

2020	\$	31,279
2021		30,316
2022		22,432
2023		18,346
2024 and thereafter		36,095
Total future minimum lease payments	\$	<u>138,468</u>

Lessee Obligations

As of December 31, 2019, the Company had operating and finance leases, as lessee, primarily associated with sale/leaseback transactions that are partially secured by restricted cash, security deposits and pledged escrows (see also Note 1, Nature of Operations) as summarized below. These leases expire over the next one to nine years. Minimum rent payments under operating and finance leases are recognized on a straight-line basis over the term of the lease. Leases

[Table of Contents](#)

contain termination clauses with associated penalties, the amount of which cause the likelihood of cancellation to be remote.

In prior periods, the Company entered into sale/leaseback transactions that were accounted for as finance leases and reported as part of finance obligations. The outstanding balance of finance obligations related to sale/leaseback transactions at December 31, 2019 and December 31, 2018 was \$31.7 million and \$81.9 million, respectively. The fair value of the finance obligation approximated the carrying value as of both December 31, 2019 and December 31, 2018.

The Company has sold future services to be performed associated with certain sale/leaseback transactions and recorded the balance as a finance obligation. The outstanding balance of this obligation at December 31, 2019 was \$109.4 million, \$15.5 million and \$93.9 million of which was classified as short-term and long-term, respectively, on the accompanying consolidated balance sheet. The outstanding balance of this obligation at December 31, 2018 was \$37.0 million, \$5.7 million and \$31.3 million of which was classified as short-term and long-term, respectively. The amount is amortized using the effective interest method. The fair value of this finance obligation approximated the carrying value as of December 31, 2019.

The Company has a finance lease associated with its property and equipment in Latham, New York. Liabilities relating to this lease of \$2.2 million has been recorded as a finance obligation in the accompanying consolidated balance sheet as of December 31, 2019. The fair value of this finance obligation approximated the carrying value as of December 31, 2019.

Future minimum lease payments under operating and finance leases (with initial or remaining lease terms in excess of one year) as of December 31, 2019 were as follows (in thousands):

	Operating Leases	Finance Leases	Other Leased Property	Total Finance Obligations
2020	\$ 44,849	\$ 10,128	\$ 414	\$ 55,391
2021	44,919	9,276	407	54,602
2022	40,329	4,975	390	45,694
2023	35,738	3,150	366	39,254
2024 and thereafter	70,718	16,154	1,547	88,419
Total future minimum lease payments	236,553	43,683	3,124	283,360
Less imputed lease interest	(65,226)	(11,934)	(887)	(78,047)
Sale of future services	—	109,422	—	109,422
Total lease liabilities	<u>\$ 171,327</u>	<u>\$ 141,171</u>	<u>\$ 2,237</u>	<u>\$ 314,735</u>

Rental expense for all operating leases was \$30.6 million and \$15.8 million for the years ended December 31, 2019 and 2018, respectively.

The gross profit on sale/leaseback transactions for all operating leases was \$26.2 million and \$16.4 million for the years ended December 31, 2019 and 2018, respectively. Right of use assets obtained in exchange for new operating lease liabilities was \$121.4 million and \$46.3 million for the years ended December 31, 2019 and 2018, respectively.

At December 31, 2019 and 2018, security deposits associated with sale/leaseback transactions were \$6.0 million and \$6.8 million, respectively, and were included in other assets in the consolidated balance sheet.

Other information related to the operating leases are presented in the following table:

	Year ended December 31, 2019	Year ended December 31, 2018
Cash payments (in thousands)	\$ 29,317	\$ 14,926
Weighted average remaining lease term (years)	5.61	4.36
Weighted average discount rate	12.1%	12.1%

[Table of Contents](#)

Finance lease costs include amortization of the right of use assets (i.e. depreciation expense) and interest on lease liabilities (i.e. interest and other expense, net in the consolidated statement of operations). Finance lease costs were as follows (in thousands):

	Year ended	
	December 31, 2019	December 31, 2018
Amortization of right of use asset	\$ 3,178	\$ 7,549
Interest on finance obligations	4,863	6,908
Total finance lease cost	\$ 8,041	\$ 14,457

Right of use assets obtained in exchange for new finance lease liabilities were \$5.9 million and \$2.2 million for the years ended December 31, 2019 and 2018, respectively.

Other information related to the finance leases are presented in the following table:

	Year ended	
	December 31, 2019	December 31, 2018
Cash payments (in thousands)	\$ 61,237	\$ 33,715
Weighted average remaining lease term (years)	2.99	3.17
Weighted average discount rate	11.1%	11.8%

Restricted Cash

In connection with certain of the above noted sale/leaseback agreements, cash of \$125.1 million was required to be restricted as security as of December 31, 2019, which restricted cash will be released over the lease term. As of December 31, 2019, the Company also had certain letters of credit backed by security deposits totaling \$103.4 million that are security for the above noted sale/leaseback agreements.

The Company also had letters of credit in the aggregate amount of \$0.5 million at December 31, 2019 associated with a finance obligation from the sale/leaseback of its building. We consider cash collateralizing this letter of credit as restricted cash.

Contractual Obligations

Contractual obligations as of December 31, 2019, under agreements with non-cancelable terms are as follows (in thousands):

	Total	<1 year	1 - 3 Years	3 - 5 Years	> 5 Years
Operating lease obligations(A)	\$ 171,327	\$ 25,822	56,785	56,285	32,435
Finance lease obligations(B)	33,986	8,139	12,823	12,014	1,010
Other finance obligations(C)	109,422	15,546	33,834	38,759	21,283
Purchase obligations(D)	14,838	14,838	—	—	—
Long-term debt(E)	112,169	26,461	85,668	40	—
	\$ 441,742	\$ 90,806	\$ 189,110	\$ 107,098	\$ 54,728

(A) The Company has several non-cancelable operating leases that generally have six to seven year terms, primarily associated with sale/leaseback transactions and are partially secured with restricted cash, security deposits and pledged escrows. In addition, under a limited number of arrangements, the Company provides its products and services to customers in the form of a PPA that generally have six to seven year terms. The Company accounts for these non-cancelable sale/leaseback transactions as operating leases in accordance with Accounting Standards Codification (ASC) Subtopic 842, *Leases*, which was early adopted in 2018. The liability recognized on the consolidated balance sheet is presented within finance obligations. See Note 18, Commitments and Contingencies, to the consolidated financial statements for more detail.

(B) During the years ended December 31, 2019, 2017 and 2016, the Company entered into a series of project financings, which are accounted for as finance leases and reported as part of the finance obligations on the

[Table of Contents](#)

Company's consolidated balance sheet. These obligations are secured with restricted cash, security deposits and pledged escrows. The Company also has a finance obligation related to a sale/leaseback transaction involving its building.

- (C) The Company has received cash for future services to be performed associated with certain sale/leaseback transactions, which was treated as a finance obligation.
- (D) The Company has purchase obligations related to inventory build to meet its sales plan, stack and stack components for new units and servicing existing units.
- (E) The Company has entered into a long-term debt agreement with Generate Capital. We expect to make principal and interest payments using the proceeds from the release of restricted cash.

Off-Balance Sheet Arrangements

The Company does not have off-balance sheet arrangements that are likely to have a current or future significant effect on the Company's financial condition, changes in financial condition, revenues or expenses, results of operations, liquidity, capital expenditures or capital resources that is material to investors.

Critical Accounting Estimates

Management's discussion and analysis of our financial condition and results of operations are based upon our consolidated financial statements, which have been prepared in accordance with U.S. GAAP. The preparation of these consolidated financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses, and related disclosure of contingent assets and liabilities at the date of and during the reporting period. On an on-going basis, we evaluate our estimates and judgments, including those related to revenue recognition for multiple element arrangements, bad debts, inventories, intangible assets, valuation of long-lived assets, accrual for loss contracts on service, operating and finance leases, product warranty reserves, unbilled revenue, common stock warrants, income taxes, stock-based compensation, and contingencies. We base our estimates and judgments on historical experience and on various other factors and assumptions that are believed to be reasonable under the circumstances, the results of which form the basis for making judgments about (1) the carrying values of assets and liabilities and (2) the amount of revenue and expenses realized that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions.

We believe that the following are our most critical accounting estimates and assumptions the Company must make in the preparation of our consolidated financial statements and related notes thereto.

Revenue Recognition:

The Company enters into contracts that may contain one or a combination of fuel cell systems and infrastructure, installation, maintenance, spare parts, fuel delivery and other support services. Contracts containing fuel cell systems and related infrastructure may be sold or provided to customers under a Power Purchase Agreement (PPA), discussed further below.

The Company does not include a right of return on its products other than rights related to standard warranty provisions that permit repair or replacement of defective goods. The Company accrues for anticipated standard warranty costs at the same time that revenue is recognized for the related product, or when circumstances indicate that warranty costs will be incurred, as applicable. Only a limited number of fuel cell units are under standard warranty.

Revenue is measured based on the transaction price specified in a contract with a customer, subject to the allocation of the transaction price to distinct performance obligations as discussed below. The Company recognizes revenue when it satisfies a performance obligation by transferring control over a product or service to a customer.

The Company accounts for each distinct performance obligation within its arrangements as a distinct unit of accounting if the items under the performance obligation have value to the customer on a standalone basis. The Company considers a performance obligation to be distinct and have a standalone value if the customer can benefit from the good or service either on its own or together with other resources readily available to the customer and the Company's promise to

[Table of Contents](#)

transfer the goods or service to the customer is separately identifiable from other promises in the contract. The Company allocates revenue to each distinct performance obligation based on relative standalone selling prices.

Payment terms for sales of fuel cells, infrastructure and service to customers are typically 30 to 90 days. Sale/leaseback transactions with financial institutions are invoiced and collected upon transaction closing. Service is prepaid upfront in a majority of the arrangements. The Company does not adjust the transaction price for a significant financing component when the performance obligation is expected to be fulfilled within a year.

The Company presents the provision for common stock warrants within each revenue-related line item on the consolidated statements of operations. This presentation reflects a discount to the transaction price that those common stock warrants represent, and therefore revenue is net of these non-cash charges. The provision of common stock warrants is allocated to the relevant revenue-related line items based upon the expected mix of the revenue for each respective contract.

Nature of goods and services

The following is a description of principal activities from which the Company generates its revenue.

(i) Sales of Fuel Cell Systems and Related Infrastructure

Revenue from sales of fuel cell systems and related infrastructure represents sales of our GenDrive units, GenSure stationary backup power units, as well as hydrogen fueling infrastructure.

The Company considers comparable list prices, as well as historical average pricing approaches to determine standalone selling prices for GenDrive fuel cells. The Company uses observable evidence from similar products in the market to determine standalone selling prices for GenSure stationary backup power units and hydrogen fueling infrastructure. The determination of standalone selling prices of the Company's performance obligations requires significant judgment, including continual assessment of pricing approaches and available observable evidence in the market. Once relative standalone selling prices are determined, the Company proportionately allocates the transaction price to each performance obligation within the customer arrangement. The allocated transaction price related to fuel cell systems and spare parts is recognized as revenue at a point in time which usually occurs at shipment (and occasionally upon delivery). Revenue on hydrogen infrastructure installations is generally recognized at the point at which transfer of control passes to the customer, which usually occurs upon customer acceptance of the hydrogen infrastructure. In certain instances, control on hydrogen infrastructure installations transfers to the customer over time, and the related revenue is recognized over time as the performance obligation is satisfied. The Company uses an input method to determine the amount of revenue to recognize during each reporting period based on the Company's efforts to satisfy the performance obligation.

(ii) Services performed on fuel cell systems and related infrastructure

Revenue from services performed on fuel cell systems and related infrastructure represents revenue earned on our service and maintenance contracts and sales of spare parts. The transaction price allocated to services as discussed above is generally recognized as revenue over time on a straight-line basis over the expected service period.

In substantially all of its commercial transactions, the Company sells extended maintenance contracts that generally provide for a five to ten-year service period from the date of product installation. Services include monitoring, technical support, maintenance and services that provide for 97% to 98% uptime of the fleet. These services are accounted for as a separate performance obligation, and accordingly, revenue generated from these transactions, subject to the proportional allocation of transaction price, is deferred and recognized in income over the term of the contract, generally on a straight-line basis. Additionally, the Company may enter into annual service and extended maintenance contracts that are billed monthly. Revenue generated from these transactions is recognized in income on a straight-line basis over the term of the contract. Costs are recognized as incurred over the term of the contract. Sales of spare parts are included within service revenue on the accompanying consolidated statements of operations. When costs are projected to exceed revenues over the life of the extended maintenance contract, an accrual for loss contracts is recorded. Costs are estimated based upon historical experience and consider the estimated impact of the Company's cost reduction initiatives. The actual results may differ from these estimates.

[Table of Contents](#)

Upon expiration of the extended maintenance contracts, customers either choose to extend the contract or switch to purchasing spare parts and maintaining the fuel cell systems on their own.

(iii) Power Purchase Agreements

Revenue from PPAs primarily represents payments received from customers who make monthly payments to access the Company's GenKey solution.

When fuel cell systems and related infrastructure are provided to customers through a PPA, revenues associated with these agreements are treated as rental income and recognized on a straight-line basis over the life of the agreements.

In conjunction with entering into a PPA with a customer, the Company may enter into sale/leaseback transactions with third-party financial institutions, whereby the fuel cells, a majority of the related infrastructure and, in some cases, service are sold to the third-party financial institution and leased back to the Company through either an operating or finance lease.

Certain of the Company's sale/leaseback transactions with third-party financial institutions are required to be accounted for as finance leases. As a result, no upfront revenue was recognized at the closing of these transactions and a finance obligation for each lease was established. The fuel cell systems and related infrastructure that are provided to customers through these PPAs are considered leased property on the accompanying consolidated balance sheets. Costs to service the leased property, depreciation of the leased property, and other related costs are considered cost of PPA revenue on the accompanying consolidated statements of operations. Interest cost associated with finance leases is presented within interest and other expense, net on the accompanying consolidated statements of operations.

The Company also has sale/leaseback transactions with financial institutions, which were required to be accounted for as an operating lease. The Company has rental expense associated with these sale/leaseback agreements with financial institutions. Rental expense is recognized on a straight-line basis over the life of the agreements and is characterized as cost of PPA revenue on the consolidated statements of operations.

The Company adopted ASC Topic 842, effective January 1, 2018. As part of the adoption, the Company elected the practical expedient to not separate lease and non-lease components (i.e., maintenance services) within its rental income related to all PPA-related assets.

To recognize revenue, the Company, as lessee, is required to determine whether each sale/leaseback arrangement meets operating lease criteria. As part of the assessment of these criteria, the Company estimates certain key inputs to the associated calculations such as: 1) discount rate it uses to discount the unpaid lease payments to present value and 2) useful life of the underlying asset(s):

- ASC Topic 842 requires a lessee to discount its unpaid lease payments using the interest rate implicit in the lease or, if that rate cannot be readily determined, its incremental borrowing rate. Generally, the Company cannot determine the interest rate implicit in its leases because it does not have access to the lessor's estimated residual value or the amount of the lessor's deferred initial direct costs. Therefore, the Company generally uses its incremental borrowing rate to estimate the discount rate for each lease.
- In order for a lease to be classified as an operating lease, the lease term cannot exceed 75% (major part) of the estimated useful life of the leased asset. The average estimated useful life of the fuel cells is 10 years, and the average estimated useful life of the hydrogen infrastructure is 20 years. These estimated useful lives are compared to the term of each lease to ensure that 75% of the estimated useful life of the assets is not exceeded which allows the Company to meet the operating lease criteria.

(iv) Fuel Delivered to Customers

Revenue associated with fuel delivered to customers represents the sale of hydrogen to customers that has been purchased by the Company from a third party or generated on site.

[Table of Contents](#)

The Company purchases hydrogen fuel from suppliers in certain cases (and produces hydrogen onsite) and sells to its customers upon delivery. Revenue and cost of revenue related to this fuel is recorded as dispensed and is included in the respective “Fuel delivered to customers” lines on the accompanying consolidated statements of operations.

Warrant Accounting:

The Company accounts for common stock warrants as either derivative liabilities or as equity instruments depending on the specific terms of the respective warrant agreements, as follows:

Derivative Liabilities

Common stock warrants that require the issuance of registered shares upon exercise and do not sufficiently preclude an implied right to cash settlement are accounted for as derivative liabilities. We currently classify these derivative warrant liabilities on the accompanying balance sheet as a long-term liability, which are revalued at each balance sheet date subsequent to the initial issuance, using the Black-Scholes pricing model. This pricing model, which is based, in part, upon unobservable inputs for which there is little or no market data, requires the Company to develop its own assumptions. Changes in the fair value of the warrants are reflected in the accompanying consolidated statements of operations as change in fair value of common stock warrant liability.

Equity Instruments

Common stock warrants that meet certain applicable requirements of ASC Subtopic 815-40, *Derivatives and Hedging – Contracts in Entity’s Own Equity*, and other related guidance, including the ability of the Company to settle the warrants without the issuance of registered shares or the absence of rights of the grantee to require cash settlement, are accounted for as equity instruments. The Company classifies these equity instruments within additional paid-in capital on the consolidated balance sheets.

Common stock warrants accounted for as equity instruments represent the warrants issued to Amazon and Walmart as discussed in Note 13, Warrant Transaction Agreements. The Company early-adopted FASB Accounting Standards Update 2019-08, *Compensation – Stock Compensation (Topic 718) and Revenue from Contracts with Customers (Topic 606)* (ASU 2019-08), which requires entities to measure and classify share-based payment awards granted to a customer by applying the guidance under Topic 718. The Company adopted ASU 2019-08 as of January 1, 2019. As a result, the amount recorded as a reduction of revenue will be measured based on the grant-date fair value of the warrants. Previously, this amount was measured based on vesting date fair value with estimates of fair value determined at each financial reporting date for unvested warrant shares considered to be probable of vesting. Except for the third tranche, all existing unvested warrants are using a measurement date January 1, 2019, the adoption date, in accordance with the transition requirements of ASU 2019-08. For the third tranche, the exercise price will be determined once the second tranche vests. The measurement date will be determined at that time.

As a result of the adoption of ASU 2019-08 in the fourth quarter of 2019, applied with an effective date of January 1, 2019, the Company’s unaudited condensed consolidated financial information for the quarterly periods ended March 31, 2019, June 30, 2019, and September 30, 2019, has been revised. Amounts related to prior years were not impacted by the adoption of ASU 2019-08. The following table summarizes the impact of ASU 2019-08 adoption, as a reduction of revenue, by quarter on the consolidated statement of operations (in thousands):

	Three months ended				Total
	December 31, 2019	September 30, 2019	June 30, 2019	March 31, 2019	
Warrant expense, pre adoption	\$ (2,807)	\$ (4,583)	\$ (1,483)	\$ (4,179)	\$ (13,052)
Adjustment	—	3,087	466	2,986	6,539
Warrant expense, post adoption	(2,807)	(1,496)	(1,017)	(1,193)	(6,513)

The Company uses the Black-Scholes pricing model, which is based, in part, upon unobservable inputs for which there is little or no market data, requiring the Company to develop its own assumptions. The Company estimates the fair value of unvested warrant shares, considered to be probable of vesting. Based on this estimated fair value, the Company determines the amount of warrant expense, which is recorded as a reduction of revenue on the consolidated statement of

operations. In order to calculate warrant expense, the Company is required to make certain assumptions of key inputs to the Black-Scholes valuation model such as volatility and risk-free interest rate.

Recent Accounting Pronouncements

Recently Adopted Accounting Pronouncements

In November 2019, Accounting Standards Update (ASU) 2019-08, *Compensation—Stock Compensation (Topic 718)* and , was issued to require entities to measure and classify share-based payment awards granted to a customer (warrants) by applying the guidance in Topic 718. The Company early adopted this update with retrospective adoption as of January 1, 2019. As a result, the amount recorded as a reduction in revenue would be measured based on the grant-date fair value of the warrants, as opposed to the vesting date. Previous guidance required the Company to measure the warrant liability and related expense using guidance under ASC Topic 606.

In June 2018, an accounting update was issued to simplify the accounting for nonemployee share-based payment transactions resulting from expanding the scope of ASC Topic 718, *Compensation-Stock Compensation*, to include share-based payment transactions for acquiring goods and services from nonemployees. An entity applies the requirements of ASC Topic 718 to nonemployee awards except for specific guidance on inputs to an option pricing model and the attribution of cost (that is, the period of time over which share-based payment awards vest and the pattern of cost recognition over that period). The amendments specify that ASC Topic 718 applies to all share-based payment transactions in which a grantor acquires goods or services to be used or consumed in a grantor's own operations by issuing share-based payment awards. The amendments also clarify that ASC Topic 718 does not apply to share-based payments used to effectively provide (1) financing to the issuer or (2) awards granted in conjunction with selling goods or services to customers as part of a contract accounted for under ASC Topic 606, *Revenue from Contracts with Customers*. The Company adopted this update on January 1, 2019 and it did not have a material effect on the consolidated financial statements.

In September 2018, the Company early adopted Accounting Standards Update 2016-02, *Leases (Topic 842)*, as amended, effective January 1, 2018 and elected the available practical expedients. This adoption had a material impact on the Company's consolidated statements of operations in that it allowed the Company to recognize gross profit on sale/leaseback transactions. The previous accounting standard only allowed revenue on sale/leaseback transactions to be recognized up to the amount of cost of goods sold and gross profit was deferred. Under ASC Topic 842, revenue can be recognized in full. Another impact from the adoption of ASC Topic 842 was the recognition of right of use assets and finance obligations for operating leases on the consolidated balance sheet, as well as expanded disclosures. The table below summarizes the impact of this initial adoption to the consolidated balance sheet as of January 1, 2018 (in thousands):

Recognition of right of use asset	\$	34,416
Decrease in accrued expenses		385
Recognition of finance obligation		(34,161)
Decrease in prepaid expenses and other assets		(3,229)
Decrease in leased property, net of accumulated depreciation		(563)
Increase in accumulated deficit		3,487

In addition, the consolidated statement of operations for the year ended December 31, 2018 was impacted by a decrease of depreciation expenses of \$0.3 million.

Recently Issued and Not Yet Adopted Accounting Pronouncements

In May 2019, *Accounting Standards Update (ASU) 2019-05, Financial Instruments – Credit Losses*, was issued to provide an option to irrevocably elect the fair value option for certain financial assets previously measured at amortized cost basis. Adoption of this update is optional and within scope of Topic 326, *Financial Instruments – Credit Losses*, effective for fiscal years beginning after December 15, 2019. The Company has evaluated the adoption method and determined the impact of this standard to be immaterial to the consolidated financial statements.

In April 2019, *Accounting Standards Update (ASU) 2019-04, Codification Improvements to Topic 326, Financial Instruments—Credit Losses, Topic 815, Derivatives and Hedging, and Topic 825, Financial Instruments*, was issued to

[Table of Contents](#)

make improvements to updates 2016-01, *Financial Instruments – Overall* (Subtopic 825-10), 2016-13, *Financial Instruments – Credit Losses* (Topic 326) and 2017-12, *Derivatives and Hedging* (Topic 815). This update is effective for fiscal years beginning after December 15, 2019. The Company has evaluated the adoption method and determined the impact of this standard to be immaterial to the consolidated financial statements.

In August 2018, *Accounting Standards Update (ASU) 2018-05, Intangibles – Goodwill and Other – Internal-Use Software (Subtopic 350-40)*, was issued to help entities evaluate the accounting for fees paid by a customer in cloud computing arrangement (hosting arrangement) by providing guidance for determining when the arrangement includes a software license. The amendments in this update are effective for public companies beginning after December 15, 2019. Early adoption of the amendments in this update are permitted. The Company has evaluated the adoption method and determined the impact of this standard to be immaterial to the consolidated financial statements.

In January 2017, *Accounting Standards Update (ASU) 2017-04, Intangibles – Goodwill and Other (Topic 350)*, was issued to simplify how an entity is required to test goodwill for impairment by eliminating Step 2 from the goodwill impairment test. Step 2 measures a goodwill impairment loss by comparing the implied fair value of a reporting unit's goodwill with the carrying amount of that goodwill. This accounting update is effective for fiscal years beginning after December 15, 2019. The Company has evaluated the adoption method and determined the impact of this standard to be immaterial to the consolidated financial statements.

In August 2016, *Accounting Standards Update (ASU) 2016-15, Statement of Cash Flows (Topic 230)s: Classification of Certain Cash Receipts and Cash Payments*, was issued to reduce the existing diversity in practice in how certain cash receipts and cash payments are presented and classified in the statement of cash flows. This accounting update is effective for fiscal years beginning after December 15, 2018, and interim periods within fiscal years beginning after December 15, 2019. Early adoption is permitted, including adoption in an interim period. The Company has evaluated the adoption method and determined the impact of this standard to be immaterial to the consolidated financial statements.

In June 2016, *Accounting Standards Update (ASU) 2016-13, Financial Instruments - Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments*, was issued. ASU 2016-13 significantly changes how entities account for credit losses for financial assets and certain other instruments, including trade receivables and contract assets, that are not measured at fair value through net income. The ASU requires a number of changes to the assessment of credit losses, including the utilization of an expected credit loss model, which requires consideration of a broader range of information to estimate expected credit losses over the entire lifetime of the asset, including losses where probability is considered remote. Additionally, the standard requires the estimation of lifetime expected losses for trade receivables and contract assets that are classified as current. This update is effective beginning after January 1, 2020. The Company has evaluated the adoption method and determined the impact of this standard to be immaterial to the consolidated financial statements.

Item 7A. Quantitative and Qualitative Disclosures about Market Risk

From time to time, we may invest our cash in government, government backed and interest-bearing investment-grade securities that we generally hold for the duration of the term of the respective instrument. We do not utilize derivative financial instruments, derivative commodity instruments or other market risk sensitive instruments, positions or transactions in any material fashion, except for the Capped Call and Common Stock Forward purchased in March 2018 related to the issuance of \$100 million Convertible Senior Notes. We are not subject to any material risks arising from changes in interest rates, foreign currency exchange rates, commodity prices, equity prices or other market changes that affect market risk sensitive instruments.

Our exposure to changes in foreign currency rates is primarily related to sourcing inventory from foreign locations and operations of HyPulsion, S.A.S., our French subsidiary that develops and sells hydrogen fuel cell systems for the European material handling market. This practice can give rise to foreign exchange risk resulting from the varying cost of inventory to the receiving location. The Company reviews the level of foreign content as part of its ongoing evaluation of overall sourcing strategies and considers the exposure to be not significant. Our HyPulsion exposure presently is mitigated by low levels of operations and its sourcing is primarily intercompany in nature and denominated in U.S. dollars.

Item 8. Financial Statements and Supplementary Data

The Company's consolidated financial statements and related notes, together with the report of independent registered public accounting firm, appear at pages F-1 through F-47 of this Annual Report on Form 10-K for the year ended December 31, 2019 and are incorporated by reference in this Item 8.

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

None.

Item 9A. Controls and Procedures

(a) Evaluation of Disclosure Controls and Procedures

The chief executive officer and chief financial officer, based on their evaluation of disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) as of the end of the period covered by this Annual Report on Form 10-K, have concluded that the Company's disclosure controls and procedures are effective for ensuring that information required to be disclosed 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 Commission's rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed in filed or submitted reports is accumulated and communicated to the Company's management, including its principal executive officer and principal financial officer as appropriate, to allow timely decisions regarding required disclosure.

(b) Management's Annual Report on Internal Control over Financial Reporting

The Company's management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Rule 13a-15(f) and 15d-15(f) under the Exchange Act. The Company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with U.S. generally accepted accounting principles, and includes those policies and procedures that:

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

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

The Company's management, including our Chief Executive Officer and our Chief Financial Officer, assessed as of December 31, 2019 the effectiveness of the Company's internal control over financial reporting. In making this assessment, management used the criteria set forth in the framework in *Internal Control—Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on this assessment, management has concluded that the Company maintained effective internal control over financial reporting as of December 31, 2019 based on the specified criteria.

[Table of Contents](#)

The Company's independent registered public accounting firm has issued a report on the effectiveness of the Company's internal control over financial reporting as of December 31, 2019, which is included in Item 8 of this Annual Report on Form 10-K and incorporated herein by reference.

(c) *Changes in Internal Control Over Financial Reporting*

There were no changes in the Company's internal control over financial reporting that occurred during the last fiscal quarter that have materially affected, or are reasonably likely to materially affect, the Company's internal control over financial reporting.

Item 9B. Other Information

Not applicable.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

The information required under this item is incorporated herein by reference to the Company's definitive proxy statement pursuant to Regulation 14A, which proxy statement will be filed with the Securities and Exchange Commission not later than 120 days after the close of the Company's fiscal year ended December 31, 2019.

Code of Business Conduct and Ethics

We have adopted a Code of Business Conduct and Ethics that applies to all officers, directors, employees and consultants of the Company. The Code of Business Conduct and Ethics is intended to comply with Item 406 of Regulation S-K of the Securities Exchange Act of 1934 and with applicable rules of The NASDAQ Stock Market, Inc. Our Code of Business Conduct and Ethics is posted on our Internet website under the "Investor" page. Our Internet website address is www.plugpower.com. To the extent required or permitted by the rules of the SEC and NASDAQ, we will disclose amendments and waivers relating to our Code of Business Conduct and Ethics in the same place as our website.

Item 11. Executive Compensation

The information required under this item is incorporated herein by reference to the Company's definitive proxy statement pursuant to Regulation 14A, which proxy statement will be filed with the Securities and Exchange Commission not later than 120 days after the close of the Company's fiscal year ended December 31, 2019.

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

The information required under this item is incorporated herein by reference to the Company’s definitive proxy statement pursuant to Regulation 14A, which proxy statement will be filed with the Securities and Exchange Commission not later than 120 days after the close of the Company’s fiscal year ended December 31, 2019.

The following table gives information as of December 31, 2019, about the shares of Common Stock that may be issued upon the exercise of options and restricted stock under the Company’s 1999 Stock Option and Incentive Plan, as amended (1999 Stock Option Plan), and the Company’s Third Amended and Restated 2011 Stock Option and Incentive Plan, or the 2011 Stock Option Plan.

SECURITIES AUTHORIZED FOR ISSUANCE UNDER EQUITY COMPENSATION PLANS

Equity Compensation Plan Information

Plan Category	Number of shares to be issued upon exercise of outstanding options, warrants and rights (a)	Weighted average exercise price of outstanding options, warrants and rights (b) (1)	Number of shares remaining for future issuance under equity compensation plans (excluding shares reflected in column (a)) (c)
Equity compensation plans approved by security holders	25,683,478 (2) \$	2.05	8,377,891 (3)
Equity compensation plans not approved by security holders	1,938,672 (4) \$	2.19	—
Total	27,622,150		8,377,891

- (1) The weighted-average exercise price is calculated solely based on outstanding options.
- (2) Represents 272,161 outstanding options issued under the 1999 Stock Option Plan, 20,802,757 outstanding options issued under the 2011 Stock option Plan and 4,608,560 shares of restricted stock granted under the 2011 Stock Option Plan.
- (3) Includes shares available for future issuance under the 2011 Stock Option Plan.
- (4) Included in equity compensation plans not approved by stockholders are shares granted to new employees for key positions within the Company. No specific shares have been allocated for this purpose, but rather equity awards are approved by the Company’s Board of Directors in specific circumstances.

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

The information required under this item is incorporated herein by reference to the Company’s definitive proxy statement pursuant to Regulation 14A, which proxy statement will be filed with the Securities and Exchange Commission not later than 120 days after the close of the Company’s fiscal year ended December 31, 2019.

Item 14. Principal Accounting Fees and Services

The information required under this item is incorporated herein by reference to the Company’s definitive proxy statement pursuant to Regulation 14A, which proxy statement will be filed with the Securities and Exchange Commission not later than 120 days after the close of the Company’s fiscal year ended December 31, 2019.

PART IV

Item 15. Exhibits and Financial Statement Schedules

15(a)(1) Financial Statements

The financial statements and notes are listed in the Index to Consolidated Financial Statements on page F-1 of this Annual Report on Form 10-K.

15(a)(2) Financial Statement Schedules

The financial statement schedules are listed in the Index to Consolidated Financial Statements on page F-1 of this Annual Report on Form 10-K.

All other schedules not filed herein have been omitted as they are not applicable, or the required information or equivalent information has been included in the Consolidated Financial Statements or the notes thereto.

15(a)(3) Exhibits

The following exhibits are filed as part of and incorporated by reference into this Annual Report on Form 10-K.

Exhibit No.	Description
3.1	Amended and Restated Certificate of Incorporation of Plug Power Inc. (filed as Exhibit 3.1 to Plug Power Inc.'s Annual Report on Form 10-K for the year ended December 31, 2008 and incorporated by reference herein)
3.2	Certificate of Amendment to Amended and Restated Certificate of Incorporation of Plug Power Inc. (filed as Exhibit 3.3 to Plug Power Inc.'s Annual Report on Form 10-K for the year ended December 31, 2008 and incorporated by reference herein)
3.3	Second Certificate of Amendment of Amended and Restated Certificate of Incorporation of Plug Power Inc. (filed as Exhibit 3.1 to Plug Power Inc.'s Current Report on Form 8-K filed on May 19, 2011 and incorporated by reference herein)
3.4	Third Certificate of Amendment of Amended and Restated Certificate of Incorporation of Plug Power Inc. (filed as Exhibit 3.1 to Plug Power Inc.'s Current Report on Form 8-K filed on July 25, 2014 and incorporated by reference herein)
3.5	Certificate of Correction to Third Certificate of Amendment of Amended and Restated Certificate of Incorporation of Plug Power Inc. (filed as Exhibit 3.9 to Plug Power Inc.'s Annual Report on Form 10-K for the year ended December 31, 2016 and incorporated by reference herein)
3.6	Fourth Certificate of Amendment of Amended and Restated Certificate of Incorporation of Plug Power Inc. (filed as Exhibit 3.1 to Plug Power Inc.'s Current Report on Form 8-K filed on June 30, 2017 and incorporated by reference herein)
3.7	Certificate of Designations, Preferences and Rights of a Series of Preferred Stock of Plug Power Inc. classifying and designating the Series A Junior Participating Cumulative Preferred Stock. (filed as Exhibit 3.1 to Plug Power Inc.'s Registration Statement on Form 8-A filed on June 24, 2009 and incorporated by reference herein)

Table of Contents

- 3.8 [Certificate of Designations, Preferences and Rights of a Series of Preferred Stock of Plug Power Inc. classifying and designating the Series C Redeemable Convertible Preferred Stock. \(filed as Exhibit 3.1 to Plug Power Inc.'s Current Report on Form 8-K filed on May 20, 2013 and incorporated by reference herein\)](#)
- 3.9 [Third Amended and Restated By-laws of Plug Power Inc. \(filed as Exhibit 3.1 to Plug Power Inc.'s Current Report on Form 8-K filed on November 2, 2009 and incorporated by reference herein\)](#)
- 3.10 [Certificate of Designations, Preferences and Rights of a Series of Preferred Stock of Plug Power Inc. classifying and designating the Series E Redeemable Convertible Preferred Stock \(filed as Exhibit 3.1 to Plug Power Inc.'s Current Report on Form 8-K filed on November 2, 2018 and incorporated by reference herein\)](#)
- 4.1 [Specimen certificate for shares of common stock, \\$.01 par value, of Plug Power Inc. \(filed as Exhibit 4.1 to Plug Power Inc.'s Registration Statement on Form S-1 \(File Number 333-86089\) and incorporated by reference herein\)](#)
- 4.2 [Warrant to Purchase Common Stock, issued April 4, 2017, between Plug Power Inc. and Amazon.com NV Investment Holdings LLC \(filed as Exhibit 4.1 to Plug Power Inc.'s Current Report on Form 8-K filed on April 5, 2017 and incorporated by reference herein\)](#)
- 4.3 [Warrant to Purchase Common Stock, issued July 20, 2017, between Plug Power Inc. and Wal-Mart Stores, Inc. \(filed as Exhibit 4.1 to Plug Power Inc.'s Current Report on Form 8-K filed on July 21, 2017 and incorporated by reference herein\)](#)
- 4.4 [Indenture, dated as of March 27, 2018, between Plug Power Inc., and Wilmington Trust, National Association, as trustee \(filed as Exhibit 4.1 to Plug Power Inc.'s Current Report on Form 8-K filed on March 28, 2018 and incorporated by reference herein\)](#)
- 4.5* [Description of the Registrant's securities registered under Section 12 of the Securities Exchange Act of 1934](#)
- 10.1# [Employee Stock Purchase Plan \(filed as Exhibit 10.34 to Plug Power Inc.'s Registration Statement on Form S-1 \(File Number 333-86089\) and incorporated by reference herein\)](#)
- 10.2#* [Form of Director Indemnification Agreement](#)
- 10.3#* [Form of Officer Indemnification Agreement](#)
- 10.4# [Employment Agreement, dated as of April 7, 2008, between Andrew Marsh and Plug Power Inc. \(filed as Exhibit 10.1 to Plug Power Inc.'s Current Report on Form 8-K filed on April 7, 2008 and incorporated by reference herein\)](#)
- 10.5# [Executive Employment Agreement, dated as of May 5, 2008, between Gerard L. Conway, Jr. and Plug Power Inc. \(filed as Exhibit 10.1 to Plug Power Inc.'s Quarterly Report on Form 10-Q filed on August 7, 2008 and incorporated by reference herein\)](#)
- 10.6# [Executive Employment Agreement, dated as of October 23, 2013, between Keith C. Schmid and Plug Power Inc. \(filed as Exhibit 99.2 to Plug Power Inc.'s Current Report on Form 8-K filed on October 29, 2013 and incorporated by reference herein\)](#)
- 10.7# [Executive Employment Agreement, dated as of November 6, 2014, between Paul B. Middleton and Plug Power Inc. \(filed as Exhibit 99.2 to Plug Power Inc.'s Current Report on Form 8-K filed on November 12, 2014 and incorporated by reference herein\)](#)
- 10.8# [Form of Incentive Stock Option Agreement \(filed as Exhibit 10.2 to Plug Power Inc.'s Quarterly Report on Form 10-Q filed on August 11, 2011 and incorporated by reference herein\)](#)

Table of Contents

- 10.9# [Form of Non-Qualified Stock Option Agreement for Employees \(filed as Exhibit 10.3 to Plug Power Inc.'s Quarterly Report on Form 10-Q filed on August 11, 2011 and incorporated by reference herein\)](#)
- 10.10# [Form of Non-Qualified Stock Option Agreement for Independent Directors \(filed as Exhibit 10.4 to Plug Power Inc.'s Quarterly Report on Form 10-Q filed on August 11, 2011 and incorporated by reference herein\)](#)
- 10.11# [Form of Restricted Stock Award Agreement \(filed as Exhibit 10.5 to Plug Power Inc.'s Quarterly Report on Form 10-Q filed on August 11, 2011 and incorporated by reference herein\)](#)
- 10.12 [Purchase and Sale Agreement dated as of January 24, 2013, between Plug Power Inc. and 968 Albany Shaker Road Associates, LLC \(filed as Exhibit 10.1 to Plug Power Inc.'s Current Report on Form 8-K filed on April 1, 2013 and incorporated by reference herein\)](#)
- 10.13 [Amendment to Purchase and Sale Agreement dated as of March 13, 2013 between Plug Power Inc. and 968 Albany Shaker Road Associates, LLC \(filed as Exhibit 10.2 to Plug Power Inc.'s Current Report on Form 8-K filed on April 1, 2013 and incorporated by reference herein\)](#)
- 10.14 [Securities Purchase Agreement, dated as of May 8, 2013, between Plug Power Inc. and Air Liquide Investissements d'Avenir et de Demonstration \(filed as Exhibit 10.1 to Plug Power Inc.'s Current Report on Form 8-K filed on May 8, 2013 and incorporated by reference herein\)](#)
- 10.15 [Registration Rights Agreement, dated as of May 16, 2013, between Plug Power Inc. and Air Liquide Investissements d'Avenir et de Demonstration. \(filed as Exhibit 10.1 to Plug Power Inc.'s Current Report on Form 8-K filed on May 20, 2013 and incorporated by reference herein\)](#)
- 10.16 [License Agreement dated as of February 29, 2012, between HyPulsion, S.A.S. and Plug Power Inc. \(filed as Exhibit 10.2 to Plug Power Inc.'s Current Report on Form 8-K filed on March 21, 2012 and incorporated by reference here\)](#)
- 10.17 [Master Equipment Lease, dated as of June 30, 2014, between Plug Power Inc. and Manufacturers and Traders Trust Company \(filed as Exhibit 10.1 to Plug Power Inc.'s Registration Statement on Form S-3 \(File Number 333-214737\) and incorporated by reference herein\)](#)
- 10.18 [First Amendment to Master Equipment Lease, dated as of December 19, 2014, between Plug Power Inc. and Manufacturers and Traders Trust Company \(filed as Exhibit 10.2 to Plug Power Inc.'s Registration Statement on Form S-3 \(File Number 333-214737\) and incorporated by reference herein\)](#)
- 10.19 [Second Amendment to Master Equipment Lease, dated as of December 30, 2015, between Plug Power Inc. and Manufacturers and Traders Trust Company \(filed as Exhibit 10.3 to Plug Power Inc.'s Registration Statement on Form S-3 \(File Number 333-214737\) and incorporated by reference herein\)](#)
- 10.20 [Waiver and Third Amendment to Master Equipment Lease, dated as of June 7, 2016, between Plug Power Inc. and Manufacturers and Traders Trust Company \(filed as Exhibit 10.4 to Plug Power Inc.'s Registration Statement on Form S-3 \(File Number 333-214737\) and incorporated by reference herein\)](#)
- 10.21 [Transaction Agreement, dated as of April 4, 2017, between Plug Power Inc. and Amazon.com, Inc. \(filed as Exhibit 10.1 to Plug Power Inc.'s Current Report on Form 8-K filed on April 5, 2017 and incorporated by reference herein\)](#)
- 10.22 [Transaction Agreement, dated as of July 20, 2017, between Plug Power Inc. and Wal-Mart Stores, Inc. \(filed as Exhibit 10.1 to Plug Power Inc.'s Current Report on Form 8-K filed on July 21, 2017 and incorporated by reference herein\)](#)

Table of Contents

- 10.23 [Master Lease Agreement, dated as of June 30, 2017, between Plug Power Inc. and Wells Fargo Equipment Finance, Inc. \(filed as Exhibit 10.2 to Plug Power Inc.'s Current Report on Form 8-K filed on July 21, 2017 and incorporated by reference herein\)](#)
- 10.24 [Amended and Restated Master Lease Agreement, dated as of June 30, 2017, between Proton GCI SPV I LLC and Generate Plug Power SLB 1, LLC \(filed as Exhibit 10.3 to Plug Power Inc.'s Current Report on Form 8-K filed on July 21, 2017 and incorporated by reference herein\)](#)
- 10.25 [Form of Call Option Transaction Confirmation \(filed as Exhibit 10.1 to Plug Power Inc.'s Current Report on Form 8-K filed on March 28, 2018 and incorporated by reference herein\)](#)
- 10.26 [Forward Stock Purchase Transaction Confirmation, dated as of March 22, 2018, between Plug Power Inc. and Morgan Stanley & Co. LLC \(filed as Exhibit 10.1 to Plug Power Inc.'s Current Report on Form 8-K filed on March 28, 2018 and incorporated by reference herein\)](#)
- 10.27 [Loan and Security Agreement dated March 29, 2019, among Plug Power Inc., Emerging Power Inc., Emergent Power Inc., and Generate Lending, LLC \(filed as Exhibit 10.1 to Plug Power Inc.'s Current Report on Form 8-K filed on April 3, 2019 and incorporated by reference herein\)](#)
- 10.28 [First Amendment to Loan and Security Agreement dated March 29, 2019, among Plug Power Inc. and Emerging Power Inc., Emergent Power Inc., and Generate Lending, LLC \(filed as Exhibit 10.2 to Plug Power Inc.'s Current Report on Form 8-K filed on April 3, 2019 and incorporated by reference herein\)](#)
- 10.29 [First Amended and Restated Master Lease Agreement, dated as of July 30, 2018, between Plug Power Inc. and Wells Fargo Equipment Finance, Inc. \(filed as Exhibit 10.4 to Plug Power Inc.'s Current Report on Form 10-Q filed on May 8, 2019 and incorporated by reference herein\)](#)
- 10.30# [Third Amended and Restated 2011 Stock Option and Incentive Plan \(filed as Exhibit 10.1 to Plug Power Inc.'s Current Report on Form 8-K filed on May 15, 2019 and incorporated by reference herein\)](#)
- 10.31 [Senior Convertible Note due 2023, dated as of September 6, 2019 to HT Investments MA LLC \(filed as Exhibit 10.2 to Plug Power Inc.'s Current Report on Form 8-K filed on September 9, 2019 and incorporated herein by reference\)](#)
- 10.32 [Third Amendment to Loan and Security Agreement, dated September 6, 2019, among Plug Power Inc. and Emerging Power Inc., Emergent Power Inc., and Generate Lending, LLC \(filed as Exhibit 10.3 to Plug Power Inc.'s Current Report on Form 8-K filed on September 9, 2019 and incorporated by reference herein\)](#)
- 10.33 [Fourth Amendment to Loan and Security Agreement, dated November 27, 2019, among Plug Power Inc. and Emerging Power Inc., Emergent Power Inc., and Generate Lending, LLC \(filed as Exhibit 10.1 to Plug Power Inc.'s Current Report on Form 8-K filed on December 2, 2019 and incorporated by reference herein\)](#)
- 23.1* [Consent of KPMG LLP](#)
- 24.1* [Power of Attorney \(incorporated by reference to the signature page of this report on Form 10-K\)](#)
- 31.1* [Rule 13a-14\(a\)/15d-14\(a\) Certification of Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002](#)
- 31.2* [Rule 13a-14\(a\)/15d-14\(a\) Certification of Chief Financial Officer pursuant to Section 302 of the Sarbanes Oxley Act of 2002](#)
- 32.1** [Section 1350 Certification of Chief Executive Officer pursuant to Section 906 of the Sarbanes Oxley Act of 2002](#)

[Table of Contents](#)

32.2** [Section 1350 Certification of Chief Financial Officer pursuant to Section 906 of the Sarbanes Oxley Act of 2002](#)

101.INS* XBRL Instance Document.

101.SCH* XBRL Taxonomy Extension Schema Document.

101.CAL* XBRL Taxonomy Extension Calculation Linkbase.

101.DEF* XBRL Taxonomy Extension Definition Linkbase Document.

101.LAB* XBRL Taxonomy Extension Label Linkbase Document.

101.PRE* XBRL Taxonomy Extension Presentation Linkbase Document.

Indicates a management contract or any compensatory plan, contract or arrangement.

* Filed herewith

** Furnished herewith

Item 16. Form 10-K Summary

Not Applicable.

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS that each individual whose signature appears below constitutes and appoints each of Andrew Marsh, Paul B. Middleton and Gerard L. Conway, Jr. such person's true and lawful attorney-in-fact and agent with full power of substitution, for such person and in such person's name, place and stead, in any and all capacities, to sign any and all amendments to this Annual Report on Form 10-K, and to file the same, with all exhibits thereto, and all documents in connection therewith, with the Securities and Exchange Commission, granting unto each said attorney-in-fact and agent full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as such person might or could do in person, hereby ratifying and confirming all that any said attorney-in-fact and agent, or any substitute or substitutes of any of them, may lawfully do or cause to be done by virtue hereof.

Date: March 9, 2020

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 capacities and on the dates indicated.

<u>/s/ ANDREW MARSH</u> Andrew Marsh	President, Chief Executive Officer and Director (Principal Executive Officer)	March 9, 2020
<u>/s/ PAUL B. MIDDLETON</u> Paul B. Middleton	Chief Financial Officer (Principal Financial Officer)	March 9, 2020
<u>/s/ MARTIN D. HULL</u> Martin D. Hull	Controller & Chief Accounting Officer (Principal Accounting Officer)	March 9, 2020
<u>/s/ LUCAS P. SCHNEIDER</u> Lucas P. Schneider	Director	March 9, 2020
<u>/s/ MAUREEN O. HELMER</u> Maureen O. Helmer	Director	March 9, 2020
<u>/s/ JONATHAN SILVER</u> Jonathan Silver	Director	March 9, 2020
<u>/s/ GREGORY L. KENAUSIS</u> Gregory L. Kenausis	Director	March 9, 2020
<u>/s/ GEORGE C. MCNAMEE</u> George C. McNamee	Director	March 9, 2020
<u>/s/ JOHANNES MINHO ROTH</u> Johannes Minho Roth	Director	March 9, 2020
<u>/s/ GARY K. WILLIS</u> Gary K. Willis	Director	March 9, 2020

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

	<u>Page</u>
Report of Independent Registered Public Accounting Firm	F-2
Consolidated balance sheets as of December 31, 2019 and 2018	F-4
Consolidated statements of operations for the years ended December 31, 2019, 2018, and 2017	F-5
Consolidated statements of comprehensive loss for the years ended December 31, 2019, 2018, and 2017	F-6
Consolidated statements of stockholders' equity for the years ended December 31, 2019, 2018, and 2017	F-7
Consolidated statements of cash flows for the years ended December 31, 2019, 2018, and 2017	F-8
Notes to consolidated financial statements	F-9

Report of Independent Registered Public Accounting Firm

To the Stockholders and Board of Directors
Plug Power Inc.:

Opinions on the Consolidated Financial Statements and Internal Control Over Financial Reporting

We have audited the accompanying consolidated balance sheets of Plug Power Inc. and subsidiaries (the Company) as of December 31, 2019 and 2018, the related consolidated statements of operations, comprehensive loss, stockholders' equity, and cash flows for each of the years in the three-year period ended December 31, 2019, and the related notes (collectively, the consolidated financial statements). We also have audited the Company's internal control over financial reporting as of December 31, 2019, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2019 and 2018, and the results of its operations and its cash flows for each of the years in the three-year period ended December 31, 2019, in conformity with U.S. generally accepted accounting principles. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2019 based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

Change in Accounting Principle

As discussed in Note 2 to the consolidated financial statements, the Company changed its method of accounting for leases as of January 1, 2018 due to the modified retrospective adoption of Accounting Standards Update 2016-02, *Leases* (Topic 842), as amended.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Annual Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company's consolidated financial statements and an opinion on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with

[Table of Contents](#)

generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

 (signed) KPMG LLP

We have served as the Company's auditor since 2001.

Albany, New York
March 9, 2020

PLUG POWER INC. AND SUBSIDIARIES

CONSOLIDATED BALANCE SHEETS

As of December 31, 2019 and 2018

(In thousands, except share and per share amounts)

	<u>2019</u>	<u>2018</u>
Assets		
Current assets:		
Cash and cash equivalents	\$ 139,496	\$ 38,602
Restricted cash	54,813	17,399
Accounts receivable	25,448	37,347
Inventory	72,391	47,910
Prepaid expenses and other current assets	21,192	14,357
Total current assets	<u>313,340</u>	<u>155,615</u>
Restricted cash	175,191	54,152
Property, plant, and equipment, net	14,959	12,869
Leased property, net	244,740	146,751
Goodwill	8,842	9,023
Intangible assets, net	5,539	3,890
Other assets	8,573	8,026
Total assets	<u>\$ 771,184</u>	<u>\$ 390,326</u>
Liabilities, Redeemable Preferred Stock, and Stockholders' Equity		
Current liabilities:		
Accounts payable	\$ 40,376	\$ 34,824
Accrued expenses	14,213	7,864
Deferred revenue	11,691	12,055
Finance obligations	49,507	74,264
Current portion of long-term debt	26,461	16,803
Other current liabilities	8,543	560
Total current liabilities	<u>150,791</u>	<u>146,370</u>
Deferred revenue	23,369	28,021
Common stock warrant liability	—	105
Finance obligations	265,228	118,076
Convertible senior notes, net	110,246	63,247
Long-term debt	85,708	133
Other liabilities	13	18
Total liabilities	<u>635,355</u>	<u>355,970</u>
Redeemable preferred stock:		
Series C redeemable convertible preferred stock, \$0.01 par value per share (aggregate involuntary liquidation preference \$16,664); 10,431 shares authorized; Issued and outstanding: 2,620 at December 31, 2019 and 2018	709	709
Series E redeemable convertible preferred stock, \$0.01 par value per share; Shares authorized: 35,000 at both December 31, 2019 and December 31, 2018; Issued and outstanding: 500 at December 31, 2019 and 35,000 at December 31, 2018	441	30,934
Stockholders' equity:		
Common stock, \$0.01 par value per share; 750,000,000 shares authorized; Issued (including shares in treasury): 318,637,560 at December 31, 2019 and 234,160,661 at December 31, 2018	3,186	2,342
Additional paid-in capital	1,507,116	1,289,714
Accumulated other comprehensive income	1,400	1,584
Accumulated deficit	(1,345,807)	(1,260,290)
Less common stock in treasury: 15,259,045 at December 31, 2019 and 15,002,663 at December 31, 2018	(31,216)	(30,637)
Total stockholders' equity	<u>134,679</u>	<u>2,713</u>
Total liabilities, redeemable preferred stock, and stockholders' equity	<u>\$ 771,184</u>	<u>\$ 390,326</u>

See notes to consolidated financial statements.

PLUG POWER INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF OPERATIONS
For the years ended December 31, 2019, 2018 and 2017
(In thousands, except share and per share amounts)

	<u>2019</u>	<u>2018</u>	<u>2017</u>
Net revenue:			
Sales of fuel cell systems and related infrastructure	\$ 149,884	\$ 107,292	\$ 62,631
Services performed on fuel cell systems and related infrastructure	25,217	22,002	16,202
Power Purchase Agreements	25,853	22,869	12,869
Fuel delivered to customers	29,099	22,469	8,167
Other	186	—	284
Net revenue	<u>230,239</u>	<u>174,632</u>	<u>100,153</u>
Cost of revenue:			
Sales of fuel cell systems and related infrastructure	96,859	84,439	54,815
Services performed on fuel cell systems and related infrastructure	28,801	23,698	19,814
Power Purchase Agreements	40,056	36,161	31,292
Fuel delivered to customers	36,357	27,712	22,013
Other	200	—	308
Total cost of revenue	<u>202,273</u>	<u>172,010</u>	<u>128,242</u>
Gross profit (loss)	27,966	2,622	(28,089)
Operating expenses:			
Research and development	33,675	33,907	28,693
Selling, general and administrative	44,333	38,198	45,010
Total operating expenses	<u>78,008</u>	<u>72,105</u>	<u>73,703</u>
Operating loss	(50,042)	(69,483)	(101,792)
Interest and other expense, net	(35,502)	(22,135)	(10,100)
Change in fair value of common stock warrant liability	79	4,286	(15,188)
Loss before income taxes	\$ (85,465)	\$ (87,332)	\$ (127,080)
Income tax benefit	—	9,217	—
Net loss attributable to the Company	\$ (85,465)	\$ (78,115)	\$ (127,080)
Preferred stock dividends declared and accretion of discount	(52)	(52)	(3,098)
Net loss attributable to common stockholders	<u>\$ (85,517)</u>	<u>\$ (78,167)</u>	<u>\$ (130,178)</u>
Net loss per share:			
Basic and diluted	<u>\$ (0.36)</u>	<u>\$ (0.36)</u>	<u>\$ (0.60)</u>
Weighted average number of common stock outstanding	<u>237,152,780</u>	<u>218,882,337</u>	<u>216,343,985</u>

See notes to consolidated financial statements.

PLUG POWER INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS

For the years ended December 31, 2019, 2018 and 2017

(In thousands)

	<u>2019</u>	<u>2018</u>	<u>2017</u>
Net loss attributable to the Company	\$ (85,465)	\$ (78,115)	\$ (127,080)
Other comprehensive (loss) income - foreign currency translation adjustment	(184)	(610)	1,947
Comprehensive loss	<u>\$ (85,649)</u>	<u>\$ (78,725)</u>	<u>\$ (125,133)</u>

See notes to consolidated financial statements.

PLUG POWER INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
For the years ended December 31, 2019, 2018 and 2017
(In thousands, except share amounts)

	Common Stock		Additional Paid-in Capital	Accumulated Other Comprehensive Income	Treasury Stock		Accumulated Deficit	Total Stockholders' Equity
	Shares	Amount			Shares	Amount		
December 31, 2016	191,723,974	\$ 1,917	\$ 1,137,482	\$ 247	582,328	\$ (3,091)	\$ (1,051,467)	\$ 85,088
Net loss attributable to the Company	—	—	—	—	—	—	(127,080)	(127,080)
Other comprehensive income	—	—	—	1,947	—	—	—	1,947
Stock-based compensation	148,077	1	9,208	—	—	—	—	9,209
Stock dividend	54,130	1	88	—	—	—	(89)	—
Public offerings, common stock, net	10,170,759	102	22,890	—	—	—	—	22,992
Conversion of preferred stock, Series D	9,548,393	95	7,683	—	—	—	—	7,778
Conversion of preferred stock, Series C	2,772,518	28	416	—	—	—	—	444
Stock option exercises	154,166	2	106	—	4,823	(11)	—	97
Exercise of warrants, net of warrants issued	14,501,500	145	39,713	—	—	—	—	39,858
Provision for common stock warrants	—	—	36,322	—	—	—	—	36,322
Accretion of discount	—	—	(3,009)	—	—	—	—	(3,009)
December 31, 2017	229,073,517	\$ 2,291	\$ 1,250,899	\$ 2,194	587,151	\$ (3,102)	\$ (1,178,636)	\$ 73,646
Net loss attributable to the Company	—	—	—	—	—	—	(78,115)	(78,115)
Cumulative effect from adoption of ASC 842	—	—	—	—	—	—	(3,487)	(3,487)
Other comprehensive loss	—	—	—	(610)	—	—	—	(610)
Stock-based compensation	741,216	8	8,763	—	—	—	—	8,771
Stock dividend	29,762	—	52	—	—	—	(52)	—
Public offerings, common stock, net	3,804,654	38	6,978	—	—	—	—	7,016
Stock option exercises	511,412	5	168	—	17,606	(35)	—	138
Equity component of convertible senior notes, net of issuance costs and income tax benefit	—	—	28,664	—	—	—	—	28,664
Purchase of capped call	—	—	(16,000)	—	—	—	—	(16,000)
Purchase of common stock forward	—	—	—	—	14,397,906	(27,500)	—	(27,500)
Exercise of warrants	100	—	—	—	—	—	—	—
Provision for common stock warrants	—	—	10,190	—	—	—	—	10,190
December 31, 2018	234,160,661	\$ 2,342	\$ 1,289,714	\$ 1,584	15,002,663	\$ (30,637)	\$ (1,260,290)	\$ 2,713
Net loss attributable to the Company	—	—	—	—	—	—	(85,465)	(85,465)
Other comprehensive loss	—	—	—	(184)	—	—	—	(184)
Stock-based compensation	1,876,503	19	10,871	—	—	—	—	10,890
Stock dividend	19,286	—	52	—	—	—	(52)	—
Public offerings, common stock, net	62,333,585	622	157,807	—	—	—	—	158,429
Stock option exercises	1,151,307	12	1,784	—	256,382	(579)	—	1,217
Exercise of warrants	5,250,750	53	14,099	—	—	—	—	14,152
Provision for common stock warrants	—	—	6,513	—	—	—	—	6,513
Accretion of discount, preferred stock	—	—	(1,978)	—	—	—	—	(1,978)
Conversion of preferred stock	13,845,468	138	28,254	—	—	—	—	28,392
December 31, 2019	318,637,560	\$ 3,186	\$ 1,507,116	\$ 1,400	15,259,045	\$ (31,216)	\$ (1,345,807)	\$ 134,679

See notes to consolidated financial statements.

PLUG POWER INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS
For the years ended December 31, 2019, 2018 and 2017

(In thousands)

	2019	2018	2017
Operating Activities			
Net loss attributable to the Company	\$ (85,465)	\$ (78,115)	\$ (127,080)
Adjustments to reconcile net loss to net cash used in operating activities:			
Depreciation of property, plant and equipment, and leased property	11,989	11,014	9,190
Amortization of intangible assets	698	693	593
Stock-based compensation	10,890	8,771	9,209
Provision for bad debts and other assets	1,981	1,626	250
Amortization of debt issuance costs and discount on convertible senior notes	8,821	6,347	770
Provision for common stock warrants	6,513	10,190	36,360
Change in fair value of common stock warrant liability	(79)	(4,286)	15,188
Loss on disposal of leased assets	212	—	—
Income tax benefit	—	(9,217)	—
Changes in operating assets and liabilities that provide (use) cash:			
Accounts receivable	10,646	(14,398)	(9,951)
Inventory	(24,481)	19,041	(18,836)
Prepaid expenses, and other assets	(8,110)	(4,654)	2,157
Accounts payable, accrued expenses, and other liabilities	19,879	(10,266)	11,430
Accrual for loss contracts related to service	—	—	(752)
Deferred revenue	(5,016)	5,637	11,290
Net cash used in operating activities	<u>(51,522)</u>	<u>(57,617)</u>	<u>(60,182)</u>
Investing Activities			
Purchases of property, plant and equipment	(5,683)	(5,142)	(4,090)
Purchase of intangible asset	(2,404)	(929)	—
Purchases for construction of leased property	(6,532)	(13,501)	(40,273)
Proceeds from sale of leased assets	375	—	—
Net cash used in investing activities	<u>(14,244)</u>	<u>(19,572)</u>	<u>(44,363)</u>
Financing Activities			
Proceeds from issuance of preferred stock and warrants, net of transaction costs	14,089	30,934	17,636
Proceeds from public offerings, net of transaction costs	158,428	7,195	22,992
Proceeds from exercise of stock options	1,217	138	97
Payments for redemption of preferred stock	(4,040)	—	(3,700)
Proceeds from issuance of convertible senior notes, net	39,052	95,856	—
Purchase of capped call and common stock forward	—	(43,500)	—
Proceeds from borrowing of long-term debt, net of transaction costs	119,186	—	20,147
Principal payments on long-term debt	(24,827)	(16,190)	(12,292)
Proceeds from sale/leaseback transactions accounted for as finance obligations	83,668	76,175	45,368
Repayments of finance obligations	(61,713)	(31,264)	(18,632)
Net cash provided by financing activities	<u>325,060</u>	<u>119,344</u>	<u>71,616</u>
Effect of exchange rate changes on cash	<u>53</u>	<u>(57)</u>	<u>348</u>
Increase (decrease) in cash, cash equivalents and restricted cash	<u>259,347</u>	<u>42,098</u>	<u>(32,581)</u>
Cash, cash equivalents, and restricted cash beginning of period	<u>110,153</u>	<u>68,055</u>	<u>100,636</u>
Cash, cash equivalents, and restricted cash end of period	<u>\$ 369,500</u>	<u>\$ 110,153</u>	<u>\$ 68,055</u>
Supplemental disclosure of cash flow information			
Cash paid for interest	<u>\$ 19,180</u>	<u>\$ 13,057</u>	<u>\$ 8,791</u>
Summary of non-cash investing and financing activity			
Recognition of right of use asset	\$ 127,370	\$ 79,057	\$ —
Net transfers between inventory, leased assets and property, plant and equipment	—	18,175	—
Conversion of preferred stock to common stock	28,392	—	8,222

See notes to consolidated financial statements.

1. Nature of Operations

Description of Business

As a leading provider of comprehensive hydrogen fuel cell turnkey solutions, Plug Power is seeking to build a green hydrogen economy. The Company is focused on hydrogen and fuel cell systems that are used to power electric motors primarily in the electric mobility and stationary power markets, given the ongoing paradigm shift in the power, energy, and transportation industries to address climate change, energy security, and meet sustainability goals. Plug Power created the first commercially viable market for hydrogen fuel cell, or the HFC technology. As a result, the Company has deployed over 30,000 fuel cell systems, and has become the largest buyer of liquid hydrogen, having built and operated a hydrogen network across North America.

We are focused on proton exchange membrane, or PEM, fuel cell and fuel processing technologies, fuel cell/battery hybrid technologies, and associated hydrogen storage and dispensing infrastructure from which multiple products are available. A fuel cell is an electrochemical device that combines hydrogen and oxygen to produce electricity and heat without combustion. Hydrogen is derived from hydrocarbon fuels such as liquid petroleum gas, or LPG, natural gas, propane, methanol, ethanol, gasoline or biofuels. Plug Power develops complete hydrogen generation, delivery, storage and refueling solutions for customer locations. Currently, the Company obtains the majority of its hydrogen by purchasing it from fuel suppliers for resale to customers.

We provide and continue to develop commercially-viable hydrogen and fuel cell solutions for industrial mobility applications (including electric forklifts and electric industrial vehicles) at multi-shift high volume manufacturing and high throughput distribution sites where we believe our products and services provide a unique combination of productivity, flexibility and environmental benefits. Additionally, we manufacture and sell fuel cell products to replace batteries and diesel generators in stationary backup power applications. These products have proven valuable with telecommunications, transportation and utility customers as robust, reliable and sustainable power solutions.

Our current products and services include:

GenDrive: GenDrive is our hydrogen fueled PEM fuel cell system providing power to material handling electric vehicles, including class 1, 2, 3 and 6 electric forklifts and ground support equipment;

GenFuel: GenFuel is our hydrogen fueling delivery, generation, storage and dispensing system;

GenCare: GenCare is our ongoing ‘internet of things’-based maintenance and on-site service program for GenDrive fuel cell systems, GenSure fuel cell systems, GenFuel hydrogen storage and dispensing products and ProGen fuel cell engines;

GenSure: GenSure is our stationary fuel cell solution providing scalable, modular PEM fuel cell power to support the backup and grid-support power requirements of the telecommunications, transportation, and utility sectors;

GenKey: GenKey is our vertically integrated “turn-key” solution combining either GenDrive or GenSure fuel cell power with GenFuel fuel and GenCare aftermarket service, offering complete simplicity to customers transitioning to fuel cell power; and

ProGen: ProGen is our fuel cell stack and engine technology currently used globally in mobility and stationary fuel cell systems, and as engines in electric delivery vans.

We provide our products worldwide through our direct product sales force, and by leveraging relationships with original equipment manufacturers, and their dealer networks. We manufacture our commercially-viable products in Latham, NY and Spokane, WA.

We were organized as a corporation in the State of Delaware on June 27, 1997.

Notes to Consolidated Financial Statements (Continued)

Unless the context indicates otherwise, the terms “Company,” “Plug Power,” “we,” “our” or “us” as used herein refers to Plug Power Inc. and its subsidiaries.

Liquidity

Our cash requirements relate primarily to working capital needed to operate and grow our business, including funding operating expenses, growth in inventory to support both shipments of new units and servicing the installed base, growth in equipment leased to customers under long-term arrangements, funding the growth in our GenKey “turn-key” solution, which includes the installation of our customers’ hydrogen infrastructure as well as delivery of the hydrogen fuel, continued development and expansion of our products, payment of lease/financing obligations under sale/leaseback financings, and the repayment or refinancing of our long-term debt. Our ability to achieve profitability and meet future liquidity needs and capital requirements will depend upon numerous factors, including the timing and quantity of product orders and shipments; attaining and expanding positive gross margins across all product lines; the timing and amount of our operating expenses; the timing and costs of working capital needs; the timing and costs of developing marketing and distribution channels; the ability of our customers to obtain financing to support commercial transactions; our ability to obtain financing arrangements to support the sale or leasing of our products and services to customers and to repay or refinance our long-term debt, and the terms of such agreements that may require us to pledge or restrict substantial amounts of our cash to support these financing arrangements; the timing and costs of developing marketing and distribution channels; the timing and costs of product service requirements; the timing and costs of hiring and training product staff; the timing and costs of product development and introductions; the extent of our ongoing and new research and development programs; and changes in our strategy or our planned activities. If we are unable to fund our operations with positive cash flows and cannot obtain external financing, we may not be able to sustain future operations. As a result, we may be required to delay, reduce and/or cease our operations and/or seek bankruptcy protection.

We have experienced and continue to experience negative cash flows from operations and net losses. The Company incurred net losses attributable to common stockholders of \$85.5 million, \$78.2 million and \$130.2 million for the years ended December 31, 2019, 2018, and 2017, respectively, and had an accumulated deficit of \$1.3 billion at December 31, 2019.

We have historically funded our operations primarily through public and private offerings of equity and debt, as well as short-term borrowings, long-term debt and project financings. The Company believes that its current working capital and cash anticipated to be generated from future operations, as well as borrowings from lending and project financing sources and proceeds from equity and debt offerings will provide sufficient liquidity to fund operations for at least one year after the date the financial statements are issued. There is no guarantee that future funding will be available if and when required or at terms acceptable to the Company. This projection is based on our current expectations regarding new project financing and product sales and service, cost structure, cash burn rate and other operating assumptions.

During the year ended December 31, 2019, net cash used in operating activities was \$51.5 million, consisting primarily of a net loss attributable to the Company of \$85.5 million, and net outflows from fluctuations in working capital and other assets and liabilities of \$7.1 million, offset by the impact of noncash charges of \$41.0 million. The changes in working capital primarily were related to decreases in accounts receivable and deferred revenue, offset by increases in inventory, prepaid expenses, other current assets, accounts payable, accrued expenses, and other liabilities. Cash outflows related to equipment that we sell are included in net cash used on operating activities. As of December 31, 2019, we had cash and cash equivalents of \$139.5 million and net working capital of \$162.5 million. By comparison, at December 31, 2018, we had cash and cash equivalents of \$38.6 million and net working capital of \$9.2 million.

Net cash used in investing activities for the year ended December 31, 2019, totaled \$14.2 million and included purchases of property, plant and equipment and intangible assets and outflows associated with materials, labor, and overhead necessary to construct new leased property. Cash outflows related to equipment that we lease directly to customers are included in net cash used in investing activities. Net cash provided by financing activities for the year ended December 31, 2019 totaled \$325.1 million and primarily resulted from the net proceeds from the issuance of preferred stock and warrants of \$14.1 million, net proceeds from public offerings of our equity of \$158.4 million, proceeds from the exercise of stock options of \$1.2 million, net proceeds of \$39.1 million from the issuance of the \$40 million Convertible Senior Note, proceeds from the issuance of long-term debt of \$119.2 million and increase in finance obligations of \$83.7

Notes to Consolidated Financial Statements (Continued)

million, offset by payments for redemption of preferred stock of \$4.0 million and repayments of long-term debt of \$24.8 million and finance obligations of \$61.7 million.

Public and Private Offerings of Equity and Debt

Common Stock Issuance

On April 3, 2017, the Company entered into an At Market Issuance Sales Agreement, or the Sales Agreement, with FBR Capital Markets & Co. (now B. Riley FBR, Inc.), or FBR, as sales agent, pursuant to which the Company may offer and sell, from time to time through FBR, shares of common stock par value \$0.01 per share having an aggregate offering price of up to \$75.0 million. During the year ended December 31, 2019, the Company issued 6.3 million shares of common stock through its Sales Agreement resulting in net proceeds of \$14.5 million. As of December 2, 2019, the Company had raised a total of \$46.8 million during the term of the Sales Agreement. On December 2, 2019, the Sales Agreement expired.

In December 2019, the Company sold 46 million shares of common stock at a public price of \$2.75 per share for net proceeds of approximately \$120.4 million.

In March 2019, the Company sold 10 million shares of common stock at a purchase price of \$2.35 per share for net proceeds of \$23.5 million.

Preferred Stock Issuance

In November 2018, the Company completed a private placement of an aggregate of 35,000 shares of the Company's Series E Redeemable Convertible Preferred Stock, par value \$0.01 per share, or the Series E Preferred Stock, for net proceeds of approximately \$30.9 million. In the third quarter of 2019, the Company redeemed 4,038 shares of Series E Preferred Stock totaling \$4.0 million. In the fourth quarter of 2019, the Company converted 30,962 shares of Series E Preferred Stock into 13.8 million shares of common stock. In January 2020, the Company converted the remainder of the 500 shares of Series E Preferred Stock into 216 thousand shares of common stock. See Note 12, Redeemable Convertible Preferred Stock, for additional information.

Debt

In September 2019, the Company issued a \$40.0 million in aggregate principal amount of 7.5% convertible senior note due in 2023, which we refer to herein as the \$40 million Convertible Senior Note. The Company's total obligation, net of interest accretion, due to the holder is \$48.0 million. The total net proceeds from this offering, after deducting costs of the issuance were \$39.1 million. As of December 31, 2019, the outstanding balance of the note, net of related discount and issuance costs, was \$39.6 million. See Note 10, Convertible Senior Notes, for more details.

In March 2018, the Company issued \$100.0 million in aggregate principal amount of 5.5% convertible senior notes due in 2023, which we refer to herein as the \$100 million Convertible Senior Notes. The total net proceeds from this offering, after deducting costs of the issuance, were approximately \$95.9 million. Approximately \$43.5 million of the proceeds were used for the cost of the Capped Call and the Common Stock Forward, both of which are hedges related to the \$100 million Convertible Senior Notes. As of December 31, 2019, the outstanding balance of the notes, net of related accretion and issuance costs, was \$70.6 million. See Note 10, Convertible Senior Notes, for more details.

On April 12, 2017, the Company issued to Tech Opportunities LLC (Tech Opps) warrants to acquire up to 5,250,750 shares of common stock at an exercise price of \$2.69 per share. All of these warrants were exercised on October 15, 2019 for net proceeds of \$14.1 million. See Note 11, Stockholders' Equity, for additional information.

Operating or Finance Leases

The Company enters into sale/leaseback agreements with various financial institutions to facilitate the Company's commercial transactions with key customers. The Company sells certain fuel cell systems and hydrogen infrastructure to the financial institutions and leases the equipment back to support certain customer locations and to fulfill its varied Power Purchase Agreements (PPAs). In connection with certain operating leases, the financial institutions require the Company

Notes to Consolidated Financial Statements (Continued)

to maintain cash balances in restricted accounts securing the Company's finance obligations. Cash received from customers under the PPAs is used to make payments against the Company's finance obligations. As the Company performs under these agreements, the required restricted cash balances are released, according to a set schedule. The total remaining lease payments to financial institutions under these agreements at December 31, 2019 was \$227.2 million, \$234.5 million of which were secured with restricted cash, security deposits and pledged service escrows.

The Company has a master lease agreement with Wells Fargo Equipment Finance, Inc. (Wells Fargo MLA) to finance the Company's commercial transactions with Wal-Mart Stores, Inc. (Walmart). The Wells Fargo MLA was entered into in 2017 and amended in 2018. Pursuant to the Wells Fargo MLA, the Company sells fuel cell systems and hydrogen infrastructure to Wells Fargo and then leases them back and operates them at Walmart sites under lease agreements with Walmart. The total remaining lease payments to Wells Fargo were \$112.8 million at December 31, 2019. Transactions completed under the Wells Fargo MLA in 2019 and 2018 were accounted for as operating leases and therefore the sales of the fuel cell systems and hydrogen infrastructure were recognized as revenue for the year ended December 31, 2019 and 2018. Transactions completed under the Wells Fargo MLA in 2017 were accounted for as finance leases. The difference in lease classification is due to changes in financing terms and their bearing on lease assessment criteria. Also included in the remaining lease payments to Wells Fargo was a sale/leaseback transaction in 2015 that was accounted for as an operating lease. In connection with the Wells Fargo MLA, the Company has a customer guarantee for a majority of the transactions. The aforementioned Wells Fargo MLA transactions required a letter of credit for the unguaranteed portion totaling \$30.7 million.

Additionally, during the third quarter of 2019, the Company entered into master lease agreements with both Key Equipment Finance (KeyBank) and SunTrust Equipment Finance & Lease Corp. (SunTrust), to finance commercial transactions with Walmart. The transactions with KeyBank and SunTrust required cash collateral for the unguaranteed portions totaling \$15.9 million. Similar to the aforementioned Wells Fargo MLA, the Company has a customer guarantee for the majority of the transactions.

During the year ended December 31, 2019, the Company entered into additional, similar master lease agreements with Wells Fargo, Crestmark Equipment Finance (Crestmark), First American Bancorp, Inc. (First American), 36th Street Capital Partners, LLC (36th Street) and Fifth Third Bank, National Association (Fifth Third) to finance subscription programs with other customers. The total remaining lease payments to these financial institutions were \$93.2 million at December 31, 2019. The majority of the lease payments are secured by cash collateral and letters of credit backed by restricted cash.

Long-Term Debt

In March 2019, the Company entered into a loan and security agreement with Generate Lending, LLC (Generate Capital) pursuant to which the Company borrowed \$85.0 million. The initial proceeds of the loan were used to pay in full the Company's long-term debt and accrued interest of \$17.6 million under the loan agreement with NY Green Bank, a Division of the New York State Energy Research & Development Authority, and terminate approximately \$50.3 million of certain equipment leases with Generate Plug Power SLB II, LLC as well as repurchase the associated leased equipment. In April 2019 and November 2019, the Company borrowed an additional \$15.0 million and \$20 million, respectively, under the Term Loan Facility with Generate Capital at 12% interest to fund working capital for ongoing deployments and other general corporate purposes. On December 31, 2019 the outstanding balance was \$112.7 million. See Note 9, Long-Term Debt for additional information.

2. Summary of Significant Accounting Policies

Principles of Consolidation

The consolidated financial statements include the financial statements of the Company and its wholly-owned subsidiaries. All significant intercompany balances and transactions have been eliminated in consolidation.

Notes to Consolidated Financial Statements (Continued)

Leases

The Company is a lessee in noncancelable (1) operating leases, primarily related to sale/leaseback transactions with financial institutions for deployment of the Company's products at certain customer sites, and (2) finance leases, also primarily related to sale/leaseback transactions with financial institutions for similar commercial purposes. The Company accounts for leases in accordance with Accounting Standards Codification (ASC) Topic 842, *Leases* (ASC Topic 842), as amended, which was adopted in 2018 (see Recently Adopted Accounting Standards).

The Company determines if an arrangement is or contains a lease at contract inception. The Company recognizes a right of use (ROU) asset and a lease liability (i.e. finance obligation) at the lease commencement date. For operating leases, the lease liability is initially measured at the present value of the unpaid lease payments at the lease commencement date. For finance leases, the lease liability is initially measured in the same manner and date as for operating leases and is subsequently measured at amortized cost using the effective interest method.

Key estimates and judgments include how the Company determines (1) the discount rate it uses to discount the unpaid lease payments to present value, (2) the lease term and (3) the lease payments.

- ASC Topic 842 requires a lessee to discount its unpaid lease payments using the interest rate implicit in the lease or, if that rate cannot be readily determined, its incremental borrowing rate. Generally, the Company cannot determine the interest rate implicit in the lease because it does not have access to the lessor's estimated residual value or the amount of the lessor's deferred initial direct costs. Therefore, the Company generally uses its incremental borrowing rate as the discount rate for the lease. The Company's incremental borrowing rate for a lease is the rate of interest it would have to pay on a collateralized basis to borrow an amount equal to the lease payments under similar terms.
- The lease term for all of the Company's leases includes the noncancelable period of the lease, plus any additional periods covered by either a Company option to extend (or not to terminate) the lease that the Company is reasonably certain to exercise, or an option to extend (or not to terminate) the lease controlled by the lessor.
- Lease payments included in the measurement of the lease liability comprise fixed payments, and the exercise price of a Company option to purchase the underlying asset if the Company is reasonably certain to exercise the option.

The ROU asset is initially measured at cost, which comprises the initial amount of the lease liability adjusted for lease payments made at or before the lease commencement date, plus any initial direct costs incurred less any lease incentives received. For operating leases, the ROU asset is subsequently measured throughout the lease term at the carrying amount of the lease liability, plus initial direct costs, plus (minus) any prepaid (accrued) lease payments, less the unamortized balance of lease incentives received. Lease expense for lease payments is recognized on a straight-line basis over the lease term.

For finance leases, the ROU asset is subsequently amortized using the straight-line method from the lease commencement date to the earlier of the end of the useful life of the underlying asset or the end of the lease term unless the lease transfers ownership of the underlying asset to the Company or the Company is reasonably certain to exercise an option to purchase the underlying asset. In those cases, the ROU asset is amortized over the useful life of the underlying asset. Amortization of the ROU asset is recognized and presented separately from interest expense on the lease liability. The Company's leases do not contain variable lease payments.

ROU assets for operating and finance leases are periodically reviewed for impairment losses. The Company uses the long-lived assets impairment guidance in ASC Subtopic 360-10, *Property, Plant, and Equipment – Overall*, to determine whether an ROU asset is impaired, and if so, the amount of the impairment loss to recognize. No impairment losses have been recognized to date.

The Company monitors for events or changes in circumstances that require a reassessment of one of its leases. When a reassessment results in the remeasurement of a lease liability, a corresponding adjustment is made to the carrying amount of the corresponding ROU asset.

Notes to Consolidated Financial Statements (Continued)

Operating and finance lease ROU assets are presented within leased property, net on the consolidated balance sheets. The current portion of operating and finance lease liabilities is included in finance obligations within current liabilities and the long-term portion is presented in finance obligations within noncurrent liabilities on the consolidated balance sheets.

The Company has elected not to recognize ROU assets and lease liabilities for short-term leases that have a lease term of 12 months or less. The Company has elected to apply the short-term lease recognition and measurement exemption for other classes of leased assets. The Company recognizes the lease payments associated with its short-term leases as an expense on a straight-line basis over the lease term.

Revenue Recognition

The Company enters into contracts that may contain one or a combination of fuel cell systems and infrastructure, installation, maintenance, spare parts, fuel delivery and other support services. Contracts containing fuel cell systems and related infrastructure may be sold or provided to customers under a Power Purchase Agreement (PPA), discussed further below.

The Company does not include a right of return on its products other than rights related to standard warranty provisions that permit repair or replacement of defective goods. The Company accrues for anticipated standard warranty costs at the same time that revenue is recognized for the related product, or when circumstances indicate that warranty costs will be incurred, as applicable. Only a limited number of fuel cell units are under standard warranty.

Revenue is measured based on the transaction price specified in a contract with a customer, subject to the allocation of the transaction price to distinct performance obligations as discussed below. The Company recognizes revenue when it satisfies a performance obligation by transferring control over a product or service to a customer.

The Company accounts for each distinct performance obligation within its arrangements as a distinct unit of accounting if the items under the performance obligation have value to the customer on a standalone basis. The Company considers a performance obligation to be distinct and have a standalone value if the customer can benefit from the good or service either on its own or together with other resources readily available to the customer and the Company's promise to transfer the goods or service to the customer is separately identifiable from other promises in the contract. The Company allocates revenue to each distinct performance obligation based on relative standalone selling prices.

Payment terms for sales of fuel cells, infrastructure and service to customers are typically 30 to 90 days. Sale/leaseback transactions with financial institutions are invoiced and collected upon transaction closing. Service is prepaid upfront in a majority of the arrangements. The Company does not adjust the transaction price for a significant financing component when the performance obligation is expected to be fulfilled within a year.

The Company presents the provision for common stock warrants within each revenue-related line item on the consolidated statements of operations. This presentation reflects a discount that those common stock warrants represent, and therefore revenue is net of these non-cash charges. The provision of common stock warrants is allocated to the relevant revenue-related line items based upon the expected mix of the revenue for each respective contract.

Nature of goods and services

The following is a description of principal activities from which the Company generates its revenue.

(i) Sales of Fuel Cell Systems and Related Infrastructure

Revenue from sales of fuel cell systems and related infrastructure represents sales of our GenDrive units, GenSure stationary backup power units, as well as hydrogen fueling infrastructure.

The Company considers comparable list prices, as well as historical average pricing approaches to determine standalone selling prices for GenDrive fuel cells. The Company uses observable evidence from similar products in the market to determine standalone selling prices for GenSure stationary backup power units and hydrogen fueling infrastructure. The determination of standalone selling prices of the Company's performance obligations requires

Notes to Consolidated Financial Statements (Continued)

significant judgment, including continual assessment of pricing approaches and available observable evidence in the market. Once relative standalone selling prices are determined, the Company proportionately allocates the transaction price to each performance obligation within the customer arrangement. The allocated transaction price related to fuel cell systems and spare parts is recognized as revenue at a point in time which usually occurs at shipment (and occasionally upon delivery). Revenue on hydrogen infrastructure installations is generally recognized at the point at which transfer of control passes to the customer, which usually occurs upon customer acceptance of the hydrogen infrastructure. In certain instances, control on hydrogen infrastructure installations transfers to the customer over time, and the related revenue is recognized over time as the performance obligation is satisfied. The Company uses an input method to determine the amount of revenue to recognize during each reporting period based on the Company's efforts to satisfy the performance obligation.

(ii) Services performed on fuel cell systems and related infrastructure

Revenue from services performed on fuel cell systems and related infrastructure represents revenue earned on our service and maintenance contracts and sales of spare parts. The transaction price allocated to services as discussed above is generally recognized as revenue over time on a straight-line basis over the expected service period.

In substantially all of its commercial transactions, the Company sells extended maintenance contracts that generally provide for a five to ten year service period from the date of product installation. Services include monitoring, technical support, maintenance and services that provide for 97% to 98% uptime of the fleet. These services are accounted for as a separate performance obligation, and accordingly, revenue generated from these transactions, subject to the proportional allocation of transaction price, is deferred and recognized in income over the term of the contract, generally on a straight-line basis. Additionally, the Company may enter into annual service and extended maintenance contracts that are billed monthly. Revenue generated from these transactions is recognized in income on a straight-line basis over the term of the contract. Costs are recognized as incurred over the term of the contract. Sales of spare parts are included within service revenue on the consolidated statements of operations. When costs are projected to exceed revenues over the life of the extended maintenance contract, an accrual for loss contracts is recorded. Costs are estimated based upon historical experience and consider the estimated impact of the Company's cost reduction initiatives. The actual results may differ from these estimates.

Upon expiration of the extended maintenance contracts, customers either choose to extend the contract or switch to purchasing spare parts and maintaining the fuel cell systems on their own.

(iii) Power Purchase Agreements

Revenue from PPAs primarily represents payments received from customers who make monthly payments to access the Company's GenKey solution.

When fuel cell systems and related infrastructure are provided to customers through a PPA, revenues associated with these agreements are treated as rental income and recognized on a straight-line basis over the life of the agreements.

In conjunction with entering into a PPA with a customer, the Company may enter into sale/leaseback transactions with third-party financial institutions, whereby the fuel cells, a majority of the related infrastructure and, in some cases, service are sold to the third-party financial institution and leased back to the Company through either an operating or finance lease.

Certain of the Company's sale/leaseback transactions with third-party financial institutions are required to be accounted for as finance leases. As a result, no upfront revenue was recognized at the closing of these transactions and a finance obligation for each lease was established. The fuel cell systems and related infrastructure that are provided to customers through these PPAs are considered leased property on the consolidated balance sheets. Costs to service the leased property, depreciation of the leased property, and other related costs are considered cost of PPA revenue on the consolidated statements of operations. Interest cost associated with finance leases is presented within interest and other expense, net on the consolidated statements of operations.

Notes to Consolidated Financial Statements (Continued)

The Company also has sale/leaseback transactions with financial institutions, which were required to be accounted for as an operating lease. The Company has rental expense associated with these sale/leaseback agreements with financial institutions. Rental expense is recognized on a straight-line basis over the life of the agreements and is characterized as cost of PPA revenue on the consolidated statements of operations.

The Company adopted ASC Topic 842, effective January 1, 2018. As part of the adoption, the Company elected the practical expedient to not separate lease and non-lease components (i.e., maintenance services) within its rental income related to all PPA-related assets.

To recognize revenue, the Company, as lessee, is required to determine whether each sale/leaseback arrangement meets operating lease criteria. As part of the assessment of these criteria, the Company estimates certain key inputs to the associated calculations such as: 1) discount rate it uses to discount the unpaid lease payments to present value and 2) useful life of the underlying asset(s):

- ASC Topic 842 requires a lessee to discount its unpaid lease payments using the interest rate implicit in the lease or, if that rate cannot be readily determined, its incremental borrowing rate. Generally, the Company cannot determine the interest rate implicit in its leases because it does not have access to the lessor's estimated residual value or the amount of the lessor's deferred initial direct costs. Therefore, the Company generally uses its incremental borrowing rate to estimate the discount rate for each lease.
- In order for a lease to be classified as an operating lease, the lease term cannot exceed 75% (major part) of the estimated useful life of the leased asset. The average estimated useful life of the fuel cells is 10 years, and the average estimated useful life of the hydrogen infrastructure is 20 years. These estimated useful lives are compared to the term of each lease to ensure that 75% of the estimated useful life of the assets is not exceeded which allows the Company to meet the operating lease criteria.

(iv) Fuel Delivered to Customers

Revenue associated with fuel delivered to customers represents the sale of hydrogen to customers that has been purchased by the Company from a third party or generated on site.

The Company purchases hydrogen fuel from suppliers in certain cases (and produces hydrogen onsite) and sells to its customers upon delivery. Revenue and cost of revenue related to this fuel is recorded as dispensed and is included in the respective "Fuel delivered to customers" lines on the consolidated statements of operations.

Contract costs

The Company expects that incremental commission fees paid to employees as a result of obtaining sales contracts are recoverable and therefore the Company capitalizes them as contract costs.

Capitalized commission fees are amortized on a straight-line basis over the period of time over which the transfer of goods or services to which the assets relate occur, typically ranging from 5 to 10 years. Amortization of the capitalized commission fees is included in selling, general, and administrative expenses.

The Company recognizes the incremental costs of obtaining contracts as an expense when incurred if the amortization period of the assets that the Company otherwise would have recognized is one year or less. These costs are included in selling, general, and administrative expenses.

Cash Equivalents

For purposes of the consolidated statements of cash flows, the Company considers all highly-liquid debt instruments with original maturities of three months or less to be cash equivalents. At December 31, 2019 and 2018, cash equivalents consist of money market accounts. The Company's cash and cash equivalents are deposited with financial institutions located in the U.S. and may at times exceed insured limits.

Notes to Consolidated Financial Statements (Continued)

Common Stock Warrant Accounting

The Company accounts for common stock warrants as either derivative liabilities or as equity instruments depending on the specific terms of the respective warrant agreements.

Derivative Liabilities

Registered common stock warrants that require the issuance of registered shares upon exercise and do not sufficiently preclude an implied right to cash settlement are accounted for as derivative liabilities. We currently classify these derivative warrant liabilities on the consolidated balance sheet as a long-term liability, which are revalued at each balance sheet date subsequent to the initial issuance, using the Black-Scholes pricing model. This pricing model, which is based, in part, upon unobservable inputs for which there is little or no market data, requires the Company to develop its own assumptions. Changes in the fair value of the warrants are reflected in the consolidated statements of operations as change in fair value of common stock warrant liability.

Accounts Receivable

Accounts receivable are stated at the amount billed or billable to customers and are ordinarily due between 30 and 60 days after the issuance of the invoice. Receivables are reserved or written off based on individual credit evaluation and specific circumstances of the customer. The allowance for doubtful accounts and related receivable are reduced when the amount is deemed uncollectible. As of both December 31, 2019, and 2018, the allowance for doubtful accounts was \$249 thousand.

Inventory

Inventories are valued at the lower of cost, determined on a first-in, first-out basis, and net realizable value. All inventory, including spare parts inventory held at service locations, is not relieved until the customer has received the product, at which time the risks and rewards of ownership have transferred.

Property, Plant and Equipment

Property, plant and equipment are originally recorded at cost or, if acquired as part of business combination, at fair value. Maintenance and repairs are expensed as costs are incurred. Depreciation on plant and equipment, which includes depreciation on the Company's primary manufacturing facility, which is accounted for as a financing obligation, is calculated on the straight-line method over the estimated useful lives of the assets. The Company records depreciation and amortization over the following estimated useful lives:

Leasehold improvements	5 - 10 years
Software, machinery and equipment	1 - 15 years

Gains and losses resulting from the sale of property and equipment are recorded in current operations.

Leased Property

Leased property primarily consists of the cost of assets deployed related to finance leases. Depreciation expense is recorded on a straight-line basis over the shorter of the lease term or the estimated useful life of the asset, generally six to seven years, and is included in cost of revenue for PPAs in the consolidated statements of operations.

Impairment of Long-Lived Assets

Long-lived assets, such as property, plant, and equipment, leased property and purchased intangibles subject to amortization, are reviewed for potential impairment whenever events or changes in circumstances indicate that the carrying amount of an asset or asset group may not be recoverable. Recoverability of assets to be held and used is measured by a comparison of the carrying amount of an asset or asset group to estimated undiscounted future cash flows expected to be generated by the asset or asset group. If the carrying amount of an asset or asset group exceeds its estimated undiscounted

Notes to Consolidated Financial Statements (Continued)

future cash flows, an impairment charge is recognized by the amount by which the carrying amount of the asset or asset group exceeds the fair value of the asset or asset group. Fair value is determined through various valuation techniques, including discounted cash flow models, quoted market values and third-party independent appraisals, as considered necessary. Assets to be disposed of and considered held for sale would be separately presented in the consolidated balance sheet and reported at the lower of the carrying amount or fair value less costs to sell, and are no longer depreciated. The assets and liabilities of a disposal group classified as held for sale would be presented separately in the appropriate asset and liability sections of the consolidated balance sheet.

Goodwill

Goodwill is an asset representing the future economic benefits arising from other assets acquired in a business combination that are not individually identified and separately recognized. Goodwill is reviewed for impairment at least annually.

The Company has the option to perform a qualitative assessment to determine whether it is more-likely-than-not that the fair value of a reporting unit is less than its carrying amount prior to performing the two-step goodwill impairment test. If this is the case, the two-step goodwill impairment test is required. If it is more-likely-than-not that the fair value of a reporting unit is greater than its carrying amount, the two-step goodwill impairment test is not required.

The Company performs an impairment review of goodwill on an annual basis at December 1, and when a triggering event is determined to have occurred between annual impairment tests. For the years ended December 31, 2019, 2018, and 2017, the Company performed a qualitative assessment of goodwill for its single reporting unit based on multiple factors including market capitalization and determined that it is not more likely than not that the fair value of its reporting unit is less than the carrying amount.

Intangible Assets

Intangible assets consist of acquired technology, customer relationships and trademarks, and are amortized using a straight-line method over their useful lives of 5 - 10 years. Additionally, the intangible assets are reviewed for impairment when certain triggering events occur.

Product Warranty Reserve

Aside from when included in the sale of an extended maintenance contract, the Company provides a one to two year standard product warranty to customers from date of installation of GenDrive units, and the GenSure sales generally include a two year standard product warranty. We currently estimate the costs of satisfying warranty claims based on an analysis of past experience and provide for future claims in the period the revenue is recognized. Factors that affect our warranty liability include the number of installed units, estimated material costs, estimated travel, and labor costs. The warranty reserve is included within the other current liabilities on the consolidated balance sheet.

Equity Instruments

Common stock warrants that meet certain applicable requirements of ASC Subtopic 815-40, *Derivatives and Hedging – Contracts in Entity's Own Equity*, and other related guidance, including the ability of the Company to settle the warrants without the issuance of registered shares or the absence of rights of the grantee to require cash settlement, are accounted for as equity instruments. The Company classifies these equity instruments within additional paid-in capital on the consolidated balance sheets.

Common stock warrants accounted for as equity instruments represent the warrants issued to Amazon and Walmart as discussed in Note 13, Warrant Transaction Agreements. The Company early-adopted FASB Accounting Standards Update 2019-08, *Compensation – Stock Compensation (Topic 718) and Revenue from Contracts with Customers (Topic 606)* (ASU 2019-08), which requires entities to measure and classify share-based payment awards granted to a customer by applying the guidance under Topic 718. The Company adopted ASU 2019-08 as of January 1, 2019. As a result, the amount recorded as a reduction of revenue will be measured based on the grant-date fair value of the warrants. Previously, this amount was measured based on vesting date fair value with estimates of fair value determined at each

Notes to Consolidated Financial Statements (Continued)

financial reporting date for unvested warrant shares considered to be probable of vesting. Except for the third tranche, all existing unvested warrants are using a measurement date January 1, 2019, the adoption date, in accordance with the transition requirements of ASU 2019-08. For the third tranche, the exercise price will be determined once the second tranche vests. The measurement date will be determined at that time.

As a result of the adoption of ASU 2019-08 in the fourth quarter of 2019, applied with an effective date of January 1, 2019, the Company's unaudited condensed consolidated financial information for the quarterly periods ended March 31, 2019, June 30, 2019, and September 30, 2019, has been revised. Amounts related to prior years were not impacted by the adoption of ASU 2019-08. The following table summarizes the impact of ASU 2019-08 adoption, as a reduction of revenue, by quarter on the consolidated statement of operations (in thousands):

	Three months ended				Total
	December 31, 2019	September 30, 2019	June 30, 2019	March 31, 2019	
Warrant expense, pre adoption	\$ (2,807)	\$ (4,583)	\$ (1,483)	\$ (4,179)	\$ (13,052)
Adjustment	—	3,087	466	2,986	6,539
Warrant expense, post adoption	(2,807)	(1,496)	(1,017)	(1,193)	(6,513)

The Company uses the Black-Scholes pricing model, which is based, in part, upon unobservable inputs for which there is little or no market data, requiring the Company to develop its own assumptions. The Company estimates the fair value of unvested warrant shares, considered to be probable of vesting. Based on this estimated fair value, the Company determines the amount of warrant expense, which is recorded as a reduction of revenue on the consolidated statement of operations. In order to calculate warrant expense, the Company is required to make certain assumptions of key inputs to the Black-Scholes valuation model such as volatility and risk-free interest rate.

Redeemable Preferred Stock

We account for redeemable preferred stock as temporary equity in accordance with applicable accounting guidance in FASB ASC Topic 480, *Distinguishing Liabilities from Equity*. Dividends on the redeemable preferred stock are accounted for as an increase in the net loss attributable to common stockholders.

Income Taxes

Income taxes are accounted for under the asset and liability method. Deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax basis and operating loss and tax credit carryforwards. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in the period that includes the enactment date. A valuation allowance is recorded to reduce the carrying amounts of deferred tax assets if it is more likely than not that such assets will not be realized.

The Company accounts for uncertain tax positions in accordance with FASB ASC No. 740-10-25, *Income Taxes-Overall-Recognition*. The Company recognizes in its consolidated financial statements the impact of a tax position only if that position is more likely than not to be sustained on audit, based on the technical merits of the position.

Foreign Currency Translation

Foreign currency translation adjustments arising from conversion of the Company's foreign subsidiary's financial statements to U.S. dollars for reporting purposes are included in accumulated other comprehensive income in stockholders' equity on the consolidated balance sheets. Transaction gains and losses resulting from the effect of exchange rate changes on transactions denominated in currencies other than the functional currency of the Company's operations give rise to realized foreign currency transaction gains and losses, and are included in interest and other income and interest and other expense, respectively, in the consolidated statements of operations.

Notes to Consolidated Financial Statements (Continued)

Research and Development

Costs related to research and development activities by the Company are expensed as incurred.

Stock-Based Compensation

The Company maintains employee stock-based compensation plans, which are described more fully in Note 15, Employee Benefit Plans.

Stock-based compensation represents the cost related to stock-based awards granted to employees and directors. The Company measures stock-based compensation cost at grant-date, based on the fair value of the award, and recognizes the cost as expense on a straight-line basis over the option's requisite service period.

The Company estimates the fair value of stock-based awards using a Black-Scholes valuation model. Stock-based compensation expense is recorded in cost of revenue associated with sales of fuel cell systems and related infrastructure, cost of revenue for services performed on fuel cell systems and related infrastructure, research and development expense and selling, general and administrative expenses in the consolidated statements of operations based on the employees' respective function.

The Company records deferred tax assets for awards that result in deductions on the Company's income tax returns, based upon the amount of compensation cost recognized and the Company's statutory tax rate. Differences between the deferred tax assets recognized for financial reporting purposes and the actual tax deduction reported on the Company's income tax return are recorded in the income statement. No tax benefit or expense for stock-based compensation has been recorded during the years ended December 31, 2019, 2018 and 2017 since the Company remains in a net operating loss (NOL) position.

Convertible Senior Notes

\$100 Million Convertible Senior Notes

In March 2018, the Company issued \$100.0 million in aggregate principal amount of 5.5% Convertible Senior Notes due on March 15, 2023. The Company accounts for the \$100 million Convertible Senior Notes with separate liability and equity components. The carrying amount of the liability component was initially determined by estimating the fair value of a similar debt instrument that does not have an associated convertible feature. The carrying amount of the equity component representing the conversion option was determined by deducting the estimated fair value of the liability component from the par value of the \$100 million Convertible Senior Notes as a whole as of the date of issuance. This difference represents a debt discount that is amortized to interest expense, with a corresponding increase to the carrying amount of the liability component, over the term of the \$100 million Convertible Senior Notes using the effective interest rate method. The equity component is not remeasured as long as it continues to meet the conditions for equity classification. The Company has allocated issuance costs incurred to the liability and equity components. Issuance costs attributable to the liability component are being amortized to expense over the respective term of the \$100 million Convertible Senior Notes, and issuance costs attributable to the equity components were netted with the respective equity component in additional paid-in capital.

\$40 Million Convertible Senior Note

In September 2019, the Company issued a \$40.0 million in aggregate principal amount of 7.5% Convertible Senior Note due on January 5, 2023, in exchange for net proceeds of \$39.1 million.

The Company accounts for the issued \$40 million Convertible Senior Note as a liability. Upon maturity of the note, the Company is required to repay 120% of \$40.0 million, or \$48.0 million. As such, the Company recorded a liability for \$48.0 million and associated discount for \$8.0 million. The \$8.0 million discount amortized into interest expense over the term of the \$40 million Convertible Senior Note using the effective interest method. Issuance costs are also being amortized to interest expense over the term of the \$40 million Convertible Senior Note.

Notes to Consolidated Financial Statements (Continued)

Use of Estimates

The consolidated financial statements of the Company have been prepared in conformity with U.S. generally accepted accounting principles, which require 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 consolidated financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Reclassifications

Reclassifications are made, whenever necessary, to prior period financial statements to conform to the current period presentation.

Subsequent Events

The Company evaluates subsequent events at the date of the balance sheet as well as conditions that arise after the balance sheet date but before the consolidated financial statements are issued. The effects of conditions that existed at the balance sheet date are recognized in the consolidated financial statements. Events and conditions arising after the balance sheet date but before the consolidated financial statements are issued are evaluated to determine if disclosure is required to keep the consolidated financial statements from being misleading. To the extent such events and conditions exist, if any, disclosures are made regarding the nature of events and the estimated financial effects for those events and conditions.

Recent Accounting Pronouncements

Recently Adopted Accounting Pronouncements

In November 2019, Accounting Standards Update (ASU) 2019-08, *Compensation—Stock Compensation (Topic 718)* and , was issued to require entities to measure and classify share-based payment awards granted to a customer (warrants) by applying the guidance in Topic 718. The Company early adopted this update during the fourth quarter of 2019 with retrospective adoption as of January 1, 2019. As a result, the amount recorded as a reduction in revenue will be measured based on the grant-date fair value of the warrants, as opposed to the vesting date. Previous guidance required the Company to measure the warrant liability and related expense using guidance under ASC Topic 606.

In June 2018, an accounting update was issued to simplify the accounting for nonemployee share-based payment transactions resulting from expanding the scope of ASC Topic 718, *Compensation-Stock Compensation*, to include share-based payment transactions for acquiring goods and services from nonemployees. An entity applies the requirements of ASC Topic 718 to nonemployee awards except for specific guidance on inputs to an option pricing model and the attribution of cost (that is, the period of time over which share-based payment awards vest and the pattern of cost recognition over that period). The amendments specify that ASC Topic 718 applies to all share-based payment transactions in which a grantor acquires goods or services to be used or consumed in a grantor's own operations by issuing share-based payment awards. The amendments also clarify that ASC Topic 718 does not apply to share-based payments used to effectively provide (1) financing to the issuer or (2) awards granted in conjunction with selling goods or services to customers as part of a contract accounted for under ASC Topic 606, *Revenue from Contracts with Customers*. The Company adopted this update on January 1, 2019 and it did not have a material effect on the consolidated financial statements.

In September 2018, the Company early adopted Accounting Standards Update 2016-02, *Leases (Topic 842)*, as amended, effective January 1, 2018 and elected the available practical expedients. This adoption had a material impact on the Company's consolidated statements of operations in that it allowed the Company to recognize gross profit on sale/leaseback transactions. The previous accounting standard only allowed revenue on sale/leaseback transactions to be recognized up to the amount of cost of goods sold and gross profit was deferred. Under ASC Topic 842, revenue can be recognized in full. Another impact from the adoption of ASC Topic 842 was the recognition of right of use assets and

Notes to Consolidated Financial Statements (Continued)

finance obligations for operating leases on the consolidated balance sheet, as well as expanded disclosures. The table below summarizes the impact of this initial adoption to the consolidated balance sheet as of January 1, 2018 (in thousands):

Recognition of right of use asset	\$	34,416
Decrease in accrued expenses		385
Recognition of finance obligation		(34,161)
Decrease in prepaid expenses and other assets		(3,229)
Decrease in leased property, net of accumulated depreciation		(563)
Increase in accumulated deficit		3,487

In addition, the consolidated statement of operations for the year ended December 31, 2018 was impacted by a decrease of depreciation expenses of \$0.3 million.

Recently Issued and Not Yet Adopted Accounting Pronouncements

In May 2019, *Accounting Standards Update (ASU) 2019-05, Financial Instruments – Credit Losses*, was issued to provide an option to irrevocably elect the fair value option for certain financial assets previously measured at amortized cost basis. Adoption of this update is optional and within scope of Topic 326, *Financial Instruments – Credit Losses*, effective for fiscal years beginning after December 15, 2019. The Company has evaluated the adoption method and determined the impact of this standard to be immaterial to the consolidated financial statements.

In April 2019, *Accounting Standards Update (ASU) 2019-04, Codification Improvements to Topic 326, Financial Instruments—Credit Losses, Topic 815, Derivatives and Hedging, and Topic 825, Financial Instruments*, was issued to make improvements to updates 2016-01, *Financial Instruments – Overall* (Subtopic 825-10), 2016-13, *Financial Instruments – Credit Losses* (Topic 326) and 2017-12, *Derivatives and Hedging* (Topic 815). This update is effective for fiscal years beginning after December 15, 2019. The Company has evaluated the adoption method and determined the impact of this standard to be immaterial to the consolidated financial statements.

In August 2018, *Accounting Standards Update (ASU) 2018-05, Intangibles – Goodwill and Other – Internal-Use Software (Subtopic 350-40)*, was issued to help entities evaluate the accounting for fees paid by a customer in cloud computing arrangement (hosting arrangement) by providing guidance for determining when the arrangement includes a software license. The amendments in this update are effective for public companies beginning after December 15, 2019. Early adoption of the amendments in this update are permitted. The Company has evaluated the adoption method and determined the impact of this standard to be immaterial to the consolidated financial statements.

In January 2017, *Accounting Standards Update (ASU) 2017-04, Intangibles – Goodwill and Other (Topic 350)*, was issued to simplify how an entity is required to test goodwill for impairment by eliminating Step 2 from the goodwill impairment test. Step 2 measures a goodwill impairment loss by comparing the implied fair value of a reporting unit's goodwill with the carrying amount of that goodwill. This accounting update is effective for fiscal years beginning after December 15, 2019. The Company has evaluated the adoption method and determined the impact of this standard to be immaterial to the consolidated financial statements.

In August 2016, *Accounting Standards Update (ASU) 2016-15, Statement of Cash Flows (Topic 230)s: Classification of Certain Cash Receipts and Cash Payments*, was issued to reduce the existing diversity in practice in how certain cash receipts and cash payments are presented and classified in the statement of cash flows. This accounting update is effective for fiscal years beginning after December 15, 2018, and interim periods within fiscal years beginning after December 15, 2019. Early adoption is permitted, including adoption in an interim period. The Company has evaluated the adoption method and determined the impact of this standard to be immaterial to the consolidated financial statements.

In June 2016, *Accounting Standards Update (ASU) 2016-13, Financial Instruments - Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments*, was issued. ASU 2016-13 significantly changes how entities account for credit losses for financial assets and certain other instruments, including trade receivables and contract assets, that are not measured at fair value through net income. The ASU requires a number of changes to the assessment of credit losses, including the utilization of an expected credit loss model, which requires consideration of a broader range of information to estimate expected credit losses over the entire lifetime of the asset, including losses where probability is

Notes to Consolidated Financial Statements (Continued)

considered remote. Additionally, the standard requires the estimation of lifetime expected losses for trade receivables and contract assets that are classified as current. This update is effective beginning after January 1, 2020. The Company has evaluated the adoption method and determined the impact of this standard to be immaterial to the consolidated financial statements.

3. Earnings Per Share

Basic earnings per common stock are computed by dividing net loss attributable to common stockholders by the weighted average number of common stock outstanding during the reporting period. Diluted earnings per share reflects the potential dilution that could occur if securities or other contracts to issue common stock (such as stock options, unvested restricted stock, common stock warrants, and preferred stock) were exercised or converted into common stock or resulted in the issuance of common stock (net of any assumed repurchases) that then shared in the earnings of the Company, if any. This is computed by dividing net earnings by the combination of dilutive common stock equivalents, which is comprised of shares issuable under outstanding warrants, the conversion of preferred stock, and the Company's share-based compensation plans, and the weighted average number of common stock outstanding during the reporting period. Since the Company is in a net loss position, all common stock equivalents would be considered to be anti-dilutive and are, therefore, not included in the determination of diluted earnings per share. Accordingly, basic and diluted loss per share are the same.

The following table provides the components of the calculations of basic and diluted earnings per share (in thousands, except share amounts):

	Year ended December 31,		
	2019	2018	2017
Numerator:			
Net loss attributable to common stockholders	\$ (85,517)	\$ (78,167)	\$ (130,178)
Denominator:			
Weighted average number of common stock outstanding	237,152,780	218,882,337	216,343,985

The dilutive potential shares common stock are summarized as follows:

	At December 31,		
	2019	2018	2017
Stock options outstanding (1)	23,013,590	21,957,150	19,872,029
Restricted stock outstanding (2)	4,608,560	2,347,347	234,744
Common stock warrants (3)	110,573,392	115,824,142	115,824,242
Preferred stock (4)	2,998,527	17,933,591	2,782,075
Convertible Senior Notes (5)	59,133,896	43,630,020	-
Number of dilutive potential shares of common stock	200,327,965	201,692,250	138,713,090

- (1) During the years ended December 31, 2019, 2018, and 2017, the Company granted 3,221,892, 2,679,667, and 5,485,863 stock options, respectively.
- (2) During the years ended December 31, 2019, 2018, and 2017, the Company granted 3,201,892, 2,367,347, and 234,744 shares of restricted stock, respectively.
- (3) In April 2017, the Company issued 5,250,750 warrants with an exercise price of \$2.69 per warrant, as described in Note 11, Stockholders' Equity. Of these warrants issued in April 2017, all have been exercised as of December 31, 2019.

In April 2017, the Company issued warrants to acquire up to 55,286,696 of the Company's common stock as part of a transaction agreement with Amazon, subject to certain vesting events, as described in Note 13, Warrant Transaction Agreements. Of these warrants issued, none have been exercised as of December 31, 2019.

Notes to Consolidated Financial Statements (Continued)

In July 2017, the Company issued warrants to acquire up to 55,286,696 of the Company's common stock as part of a transaction agreement with Walmart, subject to certain vesting events, as described in Note 13, Warrant Transaction Agreements. Of these warrants issued, none have been exercised as of December 31, 2019.

- (4) The preferred stock amount represents the dilutive potential shares of common stock of the Series C, D and E redeemable convertible preferred stock, based on the conversion price of the preferred stock as of December 31, 2019, 2018 and 2017, respectively. Of the 10,431 Series C redeemable preferred stock issued on May 16, 2013, 7,811 had been converted to common stock through December 31, 2017, with the remainder still outstanding. Of the 18,500 Series D redeemable convertible preferred stock issued on December 22, 2016, 3,700 shares have been redeemed and the remaining 14,800 have been converted to common stock during the year ended December 31, 2017. On November 1, 2018, the Company issued 35,000 shares of Series E redeemable convertible preferred stock. As of December 31, 2019, 30,462 of the Series E Preferred Stock had been converted to common stock and 4,038 were redeemed for cash. The remainder of 500 were converted in January 2020.
- (5) In March 2018, the Company issued \$100.0 million in aggregate principal amount of 5.5% Convertible Senior Notes. In September 2019, the Company issued a \$40.0 million in aggregate principal amount of 7.5% Convertible Senior Note. See Note 10, Convertible Senior Notes.

4. Inventory

Inventory as of December 31, 2019 and 2018 consists of the following (in thousands):

	December 31, 2019	December 31, 2018
Raw materials and supplies - production locations	\$ 48,011	\$ 32,941
Raw materials and supplies - customer locations	9,241	6,755
Work-in-process	12,529	5,589
Finished goods	2,610	2,625
Inventory	<u>\$ 72,391</u>	<u>\$ 47,910</u>

5. Property, Plant and Equipment

Property, plant and equipment at December 31, 2019 and 2018 consists of the following (in thousands):

	December 31, 2019	December 31, 2018
Leasehold improvements	\$ 862	\$ 214
Software, machinery and equipment	31,514	27,058
Property, plant, and equipment	32,376	27,272
Less: accumulated depreciation	(17,417)	(14,403)
Property, plant, and equipment, net	<u>\$ 14,959</u>	<u>\$ 12,869</u>

Depreciation expense related to property, plant and equipment was \$3.6 million, \$2.6 million, and \$1.9 million for the years ended December 31, 2019, 2018 and 2017, respectively. Upon the adoption of ASC 842, the Company reclassified property and equipment, subject to a finance lease, to right of use assets. See Note 18, Commitments and Contingencies – Finance Leases as Lessee.

6. Leased Property

Leased property at December 31, 2019 and 2018 consists of the following (in thousands):

	December 31, 2019	December 31, 2018
Right of use assets - operating	\$ 198,068	\$ 76,747
Right of use assets - finance	41,475	39,905
Capitalized costs of lessor assets	41,465	41,040

Notes to Consolidated Financial Statements (Continued)

Less: accumulated depreciation		(36,268)	(10,941)
Leased property, net	\$	244,740	\$ 146,751

Capitalized costs of lessor assets associated with finance leases have been reclassified to right of use assets upon the adoption of ASC 842. Depreciation expense related to leased property was \$8.4 million, \$8.4 million, and \$7.3 million the years ended December 31, 2019, 2018 and 2017, respectively.

7. Intangible Assets

The gross carrying amount and accumulated amortization of the Company's acquired identifiable intangible assets as of December 31, 2019 are as follows (in thousands):

	Weighted Average Amortization Period	Gross Carrying Amount	Accumulated Amortization	Total
Acquired technology	10 years	\$ 8,244	\$ (2,815)	\$ 5,429
Customer relationships	10 years	260	(150)	110
Trademark	5 years	60	(60)	—
		\$ 8,564	\$ (3,025)	\$ 5,539

The gross carrying amount and accumulated amortization of the Company's acquired identifiable intangible assets as of December 31, 2018 are as follows (in thousands):

	Weighted Average Amortization Period	Gross Carrying Amount	Accumulated Amortization	Total
Acquired technology	9 years	\$ 5,926	\$ (2,176)	\$ 3,750
Customer relationships	10 years	260	(123)	137
Trademark	5 years	60	(57)	3
		\$ 6,246	\$ (2,356)	\$ 3,890

The change in the gross carrying amount of the acquired technology from December 31, 2018 to December 31, 2019 was due to the acquisition of intellectual property from EnergyOr in May 2019, a milestone payment and accrual to American Fuel Cell LLC (AFC), as well as changes attributed to foreign currency translation. The Company acquired intellectual property from EnergyOr for \$1.5 million. In addition, the Company agreed to pay the sellers a royalty based on future sales of relevant applications, not to exceed \$3.0 million, by May 22, 2025.

As part of the agreement to acquire the intellectual property from AFC, the Company shall pay AFC milestone payments not to exceed \$2.9 million in total, if certain milestones associated with the production of components related to the acquired technology are met before April 2021. As of December 31, the Company paid \$0.4 million and accrued \$0.5 million in relation to the aforementioned milestones.

Amortization expense for acquired identifiable intangible assets for the years ended December 31, 2019 and 2018 was \$0.7 million, \$0.7 million, respectively. Estimated amortization expense for subsequent years is as follows (in thousands):

2020	801
2021	801
2022	801
2023	801
2024 and thereafter	2,335
Total	\$ 5,539

Notes to Consolidated Financial Statements (Continued)

8. Accrued Expenses

Accrued expenses at December 31, 2019 and 2018 consist of (in thousands):

	2019	2018
Accrued payroll and compensation related costs	\$ 2,933	\$ 2,150
Accrued accounts payable	7,254	1,790
Accrued sales and other taxes	905	1,478
Accrued interest	2,374	1,605
Accrued other	747	841
Total	<u>\$ 14,213</u>	<u>\$ 7,864</u>

9. Long-Term Debt

In March 2019, the Company, and its subsidiaries Emerging Power Inc. and Emergent Power Inc., entered into a loan and security agreement, as amended (the Loan Agreement), with Generate Lending, LLC (Generate Capital), providing for a secured Term Loan Facility in the amount of \$100.0 million (the Term Loan Facility). The Company borrowed \$85.0 million under the Loan Agreement on the date of closing and borrowed an additional \$15.0 million in April 2019. A portion of the initial proceeds of the loan was used to pay in full the Company's long-term debt with NY Green Bank, a Division of the New York State Energy Research & Development Authority, including accrued interest of \$17.6 million (the Green Bank Loan), and terminate approximately \$50.3 million of certain equipment leases with Generate Plug Power SLB II, LLC and repurchase the associated leased equipment. In connection with this transaction, the Company recognized a loss on extinguishment of debt of approximately \$0.5 million. This loss was recorded in interest and other expenses, net in the Company's consolidated statement of operations. Additionally, \$1.7 million was paid to an escrow account related to additional fees due in connection with the Green Bank Loan if the Company does not meet certain New York State employment and fuel cell deployment targets by March 2021. This amount paid to an escrow account was recorded in long-term other assets on the Company's consolidated balance sheet as of December 31, 2019. Additionally, in November 2019, the Company borrowed an incremental \$20.0 million at 12% interest to fund working capital for ongoing deployments and other general corporate purposes. On December 31, 2019 the outstanding balance was \$112.7 million.

Advances under the Term Loan Facility bear interest at 12.0% per annum. The Loan Agreement includes covenants, limitations, and events of default customary for similar facilities. The term of the loan is three years, with a maturity date of October 6, 2022. Principal payments will be funded in part by releases of restricted cash, as described in Note 18, Commitments and Contingencies.

Interest and a portion of the principal amount is payable on a quarterly basis and the entire then outstanding principal balance of the Term Loan Facility, together with all accrued and unpaid interest, is due and payable on the maturity date of October 6, 2022. The Company may also be required to pay Generate Capital additional fees of up to \$1.5 million if the Company is unable to provide \$50.0 million of structured project financing arrangements with Generate Capital prior to December 31, 2021.

All obligations under the Loan Agreement are unconditionally guaranteed by Emerging Power Inc. and Emergent Power Inc. The Term Loan Facility is secured by substantially all of the Company's and the guarantor subsidiaries' assets, including, among other assets, all intellectual property, all securities in domestic subsidiaries and 65% of the securities in foreign subsidiaries, subject to certain exceptions and exclusions.

The Loan Agreement contains covenants, including, among others, (i) the provision of annual and quarterly financial statements, management rights and insurance policies and (ii) restrictions on incurring debt, granting liens, making acquisitions, making loans, paying dividends, dissolving, and entering into leases and asset sales and (iii) compliance with a collateral coverage covenant. The Loan Agreement also provides for events of default, including, among others, payment, bankruptcy, covenant, representation and warranty, change of control, judgment and material adverse effect defaults at the discretion of the lender. As of December 31, 2019, the Company is in compliance with all the covenants.

Notes to Consolidated Financial Statements (Continued)

The Loan Agreement provides that if there is an event of default due to the Company's insolvency or if the Company fails to perform in any material respect the servicing requirements for fuel cell systems under certain customer agreements, which failure would entitle the customer to terminate such customer agreement, replace the Company or withhold the payment of any material amount to the Company under such customer agreement, then Generate Capital has the right to cause Proton Services Inc., a wholly owned subsidiary of the Company, to replace the Company in performing the maintenance services under such customer agreement.

The Term Loan Facility requires the principal balance at the end of each of the following years may not exceed the following (in thousands):

December 31, 2020	\$	86,159
December 31, 2021		59,373

10. Convertible Senior Notes

\$40 Million Convertible Senior Note

In September 2019, the Company issued a \$40.0 million in aggregate principal amount of 7.5% Convertible Senior Note due on January 5, 2023 in exchange for net proceeds of \$39.1 million, in a private placement to an accredited investor pursuant to Rule 144A under the Securities Act. There are no required principal payments prior to maturity of the note. Upon maturity of the note, the Company is required to repay 120% of \$40.0 million, or \$48.0 million. The note bears interest at 7.5% per annum, payable quarterly in arrears on January 5, April 5, July 5 and October 5 of each year beginning on October 5, 2019 and will mature on January 5, 2023 unless earlier converted or repurchased in accordance with its terms. The note is unsecured and does not contain any financial covenants or any restrictions on the payment of dividends, or the issuance or repurchase of common stock by the Company.

The note has an initial conversion rate of 387.5969, which is subject to adjustment in certain events. The initial conversion rate is equivalent to an initial conversion price of approximately \$2.58 per share of common stock. The holder of the note may convert at its option at any time until the close of business on the second scheduled trading day immediately prior to the maturity date for shares of the Company's common stock, subject to certain limitations. In addition, the note will be automatically converted if (1) the daily volume-weighted average price per share of common stock exceeds 175% of the conversion price (as described above) on each of the 20 consecutive VWAP trading days (as defined in the note) beginning after the issue date of the note and (2) certain equity conditions (as defined in the note) are satisfied. Only if both criteria are met is the note automatically converted. Upon either the voluntary or automatic conversion of the note, the Company will deliver shares of common stock based on (1) the then-effective conversion rate and (2) the original principal amount of \$40.0 million and not the maturity principal amount of \$48.0 million. The note does not allow cash settlement (entirely or partially) upon conversion. As such, the Company uses the if-converted method for calculating any potential dilutive effect of the conversion option on diluted earnings per share.

The Company concluded the conversion features did not require bifurcation. Specifically, while the Company determined that (i) the conversion features were not clearly and closely related to the host contracts, (ii) the note (i.e., hybrid instrument) is not remeasured at fair value under otherwise applicable GAAP with changes in fair value reported in earnings as they occur and (iii) the conversion features, if freestanding, would meet the definition of a derivative, the Company concluded such conversion features meet the equity scope exception, and therefore, the conversion features are not required to be bifurcated from the note.

If the Company undergoes a fundamental change prior to the maturity date, subject to certain limitations, the holder may require the Company to repurchase for cash all or a portion of the note at a cash repurchase price equal to any accrued and unpaid interest on the note (or portion thereof), plus the greater of (1) 115% of the maturity principal amount of \$48.0 million (or portion thereof) and (2) 110% of the product of (i) the conversion rate in effect as of the trading day immediately preceding the date of such fundamental change; (ii) the principal amount of the \$40.0 million note to be repurchased divided by \$1,000; and (iii) the average of the daily volume-weighted average price per share of the Company's common stock over the five consecutive VWAP trading days immediately before the effective date of such fundamental change.

In addition, with the consent of the holder of the note, subject to certain limitations, the Company may redeem all or any portion of the note, at the Company's option, at a cash redemption price equal to any accrued and unpaid interest

Notes to Consolidated Financial Statements (Continued)

on the note (or portion thereof), plus the greater of (1) 105% of the maturity principal amount of \$48.0 million (or portion thereof); and (2) 115% of the product of (i) the conversion rate in effect as of the trading day immediately preceding the related redemption date; (ii) the principal amount of the \$40.0 million note to be redeemed divided by \$1,000; and (iii) the arithmetic average of the daily volume-weighted average price per share of common stock over the five consecutive VWAP trading days immediately before the related redemption date.

While the Company concluded the fundamental change redemption option represents an embedded derivative, the Company concluded the value of the embedded derivative to be immaterial given the likelihood of the occurrence of a fundamental change was deemed to be remote. As related to the call option, the Company concluded the call option was clearly and closely related to the host contract, and therefore, did not meet the definition of an embedded derivative.

The Company concluded the total debt discount at issuance of the note equaled approximately \$8.0 million. This debt discount was comprised of (1) the discount of \$8.0 million attributed to the fact that upon maturity, the Company is required to repay 120% of \$40.0 million, or \$48.0 million and (2) debt issuance costs of \$1.0 million. The debt discount was recorded as debt issuance cost (presented as contra debt in the consolidated balance sheet) and is being amortized to interest expense over the term of the note using the effective interest rate method.

The note consisted of the following at December 31, 2019 (in thousands):

Principal amounts:	
Principal at maturity	\$ 48,000
Unamortized debt discount	(7,400)
Unamortized debt issuance costs	(969)
Net carrying amount	<u>\$ 39,631</u>

As of December 31, 2019, the remaining life of the note was approximately 37 months.

Based on the closing price of the Company's common stock of \$3.16 on December 31, 2019, the if-converted value of the notes was greater than the principal amount. At December 31, 2019, the estimated fair value of the note was approximately \$53.5 million. The Company utilized a Monte Carlo simulation model to estimate the fair value of the convertible debt as of December 31, 2019. The simulation model is designed to capture the potential settlement features of the convertible debt, in conjunction with simulated changes in the Company's stock price over the term of the note, incorporating a volatility assumption of 70%. This is considered a Level 3 fair value measurement.

\$100 Million Convertible Senior Notes

In March 2018, the Company issued \$100.0 million in aggregate principal amount of 5.5% Convertible Senior Notes due on March 15, 2023 in a private placement to qualified institutional buyers pursuant to Rule 144A under the Securities Act. There are no required principal payments prior to maturity of the notes.

The total net proceeds from the notes were as follows:

	Amount
	(in thousands)
Principal amount	\$ 100,000
Less initial purchasers' discount	(3,250)
Less cost of related capped call and common stock forward	(43,500)
Less other issuance costs	(894)
Net proceeds	<u>\$ 52,356</u>

The notes bear interest at 5.5%, payable semi-annually in cash on March 15 and September 15 of each year. The notes will mature on March 15, 2023, unless earlier converted or repurchased in accordance with their terms. The notes are unsecured and do not contain any financial covenants or any restrictions on the payment of dividends, or the issuance or repurchase of common stock by the Company.

Notes to Consolidated Financial Statements (Continued)

Each \$1,000 principal amount of the notes will initially be convertible into 436.3002 shares of the Company's common stock, which is equivalent to an initial conversion price of approximately \$2.29 per share, subject to adjustment upon the occurrence of specified events. Holders of these notes may convert their notes at their option at any time prior to the close of the last business day immediately preceding September 15, 2022, only under the following circumstances:

- 1) during any calendar quarter (and only during such calendar quarter), if the last reported sale price of the Company's common stock for at least 20 trading days (whether or not consecutive) during a period of 30 consecutive trading days ending on, and including, the last trading day of the immediately preceding calendar quarter is greater than or equal to 130% of the conversion price on each applicable trading day;
- 2) during the five business day period after any five consecutive trading day period (the measurement period) in which the trading price (as defined in the indenture governing the notes) per \$1,000 principal amount of notes for each trading day of the measurement period was less than 98% of the product of the last reported sale price of the Company's common stock and the conversion rate for the notes on each such trading day;
- 3) if the Company calls any or all of the notes for redemption, at any time prior to the close of business on the second scheduled trading day immediately preceding the redemption date; or
- 4) upon the occurrence of certain specified corporate events, such as a beneficial owner acquiring more than 50% of the total voting power of the Company's common stock, recapitalization of the Company, dissolution or liquidation of the Company, or the Company's common stock ceases to be listed on an active market exchange.

On or after September 15, 2022, holders may convert all or any portion of their notes at any time prior to the close of business on the second scheduled trading day immediately preceding the maturity date regardless of the foregoing conditions.

Upon conversion of the notes, the Company will pay or deliver, as the case may be, cash, shares of the Company's common stock or a combination of cash and shares of the Company's common stock, at the Company's election. While the Company plans to settle the principal amount of the notes in cash subject to available funding at time of settlement, we currently use the if-converted method for calculating any potential dilutive effect of the conversion option on diluted net income per share, subject to meeting the criteria for using the treasury stock method in future periods.

The conversion rate will be subject to adjustment in some events but will not be adjusted for any accrued or unpaid interest. Holders who convert their notes in connection with certain corporate events that constitute a "make-whole fundamental change" per the indenture governing the notes or in connection with a redemption will be, under certain circumstances, entitled to an increase in the conversion rate. In addition, if the Company undergoes a fundamental change prior to the maturity date, holders may require the Company to repurchase for cash all or a portion of its notes at a repurchase price equal to 100% of the principal amount of the repurchased notes, plus accrued and unpaid interest.

The Company may not redeem the notes prior to March 20, 2021. The Company may redeem for cash all or any portion of the notes, at the Company's option, on or after March 20, 2021 if the last reported sale price of the Company's common stock has been at least 130% of the conversion price then in effect for at least 20 trading days (whether or not consecutive), including at least one of the three trading days immediately preceding the date on which the Company provides notice of redemption, during any 30 consecutive trading day period ending on, and including, the trading day immediately preceding the date on which the Company provides notice of redemption at a redemption price equal to 100% of the principal amount of the notes to be redeemed, plus accrued and unpaid interest to, but excluding, the redemption date.

In accounting for the issuance of the notes, the Company separated the notes into liability and equity components. The initial carrying amount of the liability component of approximately \$58.2 million, net of costs incurred, was calculated by measuring the fair value of a similar liability that does not have an associated convertible feature. The carrying amount of the equity component of approximately \$37.7 million, net of costs incurred, representing the conversion option, was determined by deducting the fair value of the liability component from the par value of the notes. The difference between the principal amount of the notes and the liability component (the debt discount) is amortized to interest expense using the effective interest method over the term of the notes. The effective interest rate is approximately 16.0%. The equity

Notes to Consolidated Financial Statements (Continued)

component of the notes is included in additional paid-in capital in the consolidated balance sheet and is not remeasured as long as it continues to meet the conditions for equity classification.

We incurred transaction costs related to the issuance of the notes of approximately \$4.1 million, consisting of initial purchasers' discount of approximately \$3.3 million and other issuance costs of \$0.9 million. In accounting for the transaction costs, we allocated the total amount incurred to the liability and equity components using the same proportions as the proceeds from the notes. Transaction costs attributable to the liability component were approximately \$2.4 million, were recorded as debt issuance cost (presented as contra debt in the consolidated balance sheet) and are being amortized to interest expense over the term of the notes. The transaction costs attributable to the equity component were approximately \$1.7 million and were netted with the equity component in stockholders' equity.

The notes consisted of the following at December 31, 2019 (in thousands):

Principal amounts:	
Principal	\$ 100,000
Unamortized debt discount (1)	(27,818)
Unamortized debt issuance costs (1)	(1,567)
Net carrying amount	\$ 70,615
Carrying amount of the equity component (2)	\$ 37,702

- 1) Included in the consolidated balance sheet within the \$100.0 million Convertible Senior Notes, net and amortized over the remaining life of the notes using the effective interest rate method.
- 2) Included in the consolidated balance sheet within additional paid-in capital, net of \$1.7 million in equity issuance costs and associated income tax benefit of \$9.2 million.

As of December 31, 2019, the remaining life of the notes was approximately 39 months.

Based on the closing price of the Company's common stock of \$3.16 on December 31, 2019, the if-converted value of the notes was greater than the principal amount. At December 31, 2019, the estimated fair value of the notes was approximately \$135.3 million. The Company utilized data from market activity for this instrument near December 31, 2019 to determine the fair value of this instrument. This is considered a Level 2 fair value measurement.

Capped Call

In conjunction with the issuance of the \$100 million Convertible Senior Notes, the Company entered into capped call options, or Capped Call, on the Company's common stock with certain counterparties at a price of \$16.0 million. The net cost incurred in connection with the Capped Call has been recorded as a reduction to additional paid-in capital in the consolidated balance sheet.

The Capped Call is generally expected to reduce or offset the potential dilution to the Company's common stock upon any conversion of the \$100 million Convertible Senior Notes and/or offset any cash payments the Company is required to make in excess of the principal amount of the converted notes, as the case may be, with such reduction and/or offset subject to a cap based on the cap price. The cap price of the Capped Call transactions will initially be \$3.82 per share, which represents a premium of 100% over the last reported sale price of the Company's common stock of \$1.91 per share on the date of the transaction and is subject to certain adjustments under the terms of the Capped Call. The Capped Call becomes exercisable if the conversion option is exercised.

By entering into the Capped Call, the Company expects to reduce the potential dilution to its common stock (or, in the event the conversion is settled in cash, to provide a source of cash to settle a portion of its cash payment obligation) in the event that at the time of conversion its stock price exceeds the conversion price under the \$100 million Convertible Senior Notes.

Notes to Consolidated Financial Statements (Continued)

Common Stock Forward

In connection with the sale of the \$100 million Convertible Senior Notes, the Company also entered into a forward stock purchase transaction (Common Stock Forward), pursuant to which the Company agreed to purchase 14,397,906 shares of its common stock for settlement on or about March 15, 2023. The number of shares of common stock that the Company will ultimately repurchase under the Common Stock Forward is subject to customary anti-dilution adjustments. The Common Stock Forward is subject to early settlement or settlement with alternative consideration in the event of certain corporate transactions.

The net cost incurred in connection with the Common Stock Forward of \$27.5 million has been recorded as an increase in treasury stock in the consolidated balance sheet. The related shares were accounted for as a repurchase of common stock.

The fair values of the Capped Call and Common Stock Forward are not remeasured each reporting period.

11. Stockholders' Equity

Preferred Stock

The Company has authorized 5.0 million shares of preferred stock, par value \$0.01 per share. The Company's certificate of incorporation provides that shares of preferred stock may be issued from time to time in one or more series. The Company's Board of Directors is authorized to fix the voting rights, if any, designations, powers, preferences, qualifications, limitations and restrictions thereof, applicable to the shares of each series.

The Company has authorized Series A Junior Participating Cumulative Preferred Stock, par value \$.01 per share. As of December 31, 2019 and 2018, there were no shares of Series A Junior Participating Cumulative Preferred Stock issued and outstanding. See Note 12, Redeemable Convertible Preferred Stock, for a description of the Company's issued and outstanding Series C and E redeemable preferred stock.

Common Stock and Warrants

The Company has one class of common stock, par value \$.01 per share. Each share of the Company's common stock is entitled to one vote on all matters submitted to stockholders.

In December 2019, the Company sold 46 million shares of common stock at a public price of \$2.75 per share for net proceeds of approximately \$120.4 million.

In September 2019, the Company issued a \$40.0 million in aggregate principal amount of 7.5% convertible senior note due in 2023 (\$40 million Convertible Senior Note). The Company's total obligation, net of interest accretion, due to the holder is \$48.0 million. The total net proceeds from this offering, after deducting costs of the issuance were \$39.1 million. As of December 31, 2019, the outstanding balance of the note, net of related discount and issuance costs was \$39.6 million. See Note 10, Convertible Senior Notes, for more details.

In March 2019, the Company issued and sold in a registered direct offering an aggregate of 10 million shares of the Company's common stock at a purchase price of \$2.35 per share. The net proceeds to the Company were approximately \$23.5 million. There were 303,378,515 and 219,157,998 shares of common stock outstanding as of December 31, 2019 and 2018, respectively.

On December 22, 2016, the Company issued warrants to purchase 10,501,500 shares of common stock in connection with offerings of common stock and Series D Redeemable Preferred Stock at an exercise price of \$1.50 per share. On April 12, 2017, the Company and Tech Opportunities LLC (Tech Opps) entered into an agreement, pursuant to which Tech Opps exercised in full its warrants to purchase an aggregate of 10,501,500 shares of common stock. The net proceeds received by the Company pursuant to the exercise of the existing warrants was \$15.1 million and the Company issued to Tech Opps warrants to acquire up to 5,250,750 shares of common stock at an exercise price of \$2.69 per share. All of these warrants were exercised on October 15, 2019.

Notes to Consolidated Financial Statements (Continued)

During 2017, additional warrants to purchase up to 110,573,392 shares of common stock were issued in connection with transaction agreements with Amazon and Walmart, as discussed in Note 13, Warrant Transaction Agreements. At both December 31, 2019 and 2018, in connection with these agreements, warrants to acquire 26,188,434 shares of common stock, have vested and are therefore exercisable. These warrants are measured at fair value and are classified as equity instruments on the consolidated balance sheet.

At Market Issuance Sales Agreement

On April 3, 2017, the Company entered into an At Market Issuance Sales Agreement (the Sales Agreement) with FBR Capital Markets & Co. (now B. Riley FBR, Inc.), as sales agent (FBR), pursuant to which the Company may offer and sell, from time to time through FBR, shares of common stock par value \$0.01 per share having an aggregate offering price of up to \$75.0 million. Under the Sales Agreement, in no event shall the Company issue or sell through FBR such a number of shares that exceeds the number of shares or dollar amount of common stock registered. During the year ended December 31, 2019, the Company raised gross proceeds of \$15.3 million. As of October 29, 2019, the Company had raised a total of \$46.8 million during the term of the Sales Agreement. During the fourth quarter of 2019, the Sales Agreement expired.

12. Redeemable Convertible Preferred Stock

Series E Preferred Stock

In November 2018, the Company issued an aggregate of 35,000 shares of the Company's Series E Preferred Stock in a private placement to certain accredited investors in reliance on Section 4(a)(2) of the Securities Act. The Company received net proceeds of approximately \$30.9 million, after deducting placement agent fees and expenses payable by the Company. The Company is required to redeem the Series E Preferred Stock in thirteen monthly installments in the amount of \$2.7 million each from May 2019 through May 2020. The Company had 500 and 35,000 shares of Series E Preferred Stock outstanding at December 31, 2019 and 2018, respectively. These shares were fully redeemed in January 2020. During 2019, 4,038 shares were redeemed for cash of \$4.0 million, and 30,462 shares were converted to 13.8 million shares of common stock.

Each share of Series E Preferred Stock was issued with an initial stated value of \$1,000 per share. The Company is required to elect, on a monthly basis, whether it will redeem or convert the installment. Should the Company elect to redeem, the shares are valued at the stated value. Should the Company elect to convert, the holder of the shares will receive common stock, with a conversion price discounted by 15% from the then current market value. The holders of the shares may elect to convert all or any whole amount of shares, at any time at a conversion price of \$2.31 per share. Conversion prices are discounted upon a change in control, certain triggering events, or failure to make a redemption payment.

Except for our Series C Preferred Stock, which shall rank senior to the Series E Preferred Stock as to dividends, distributions and payments upon liquidation, dissolution and winding up, all shares of the Company's capital stock, including common stock, rank junior in rank to the Series E Preferred Stock with respect to dividends, distributions and payments upon liquidation, dissolution and winding up.

Holders of the Series E Preferred Stock are not entitled to receive dividends except in connection with certain purchase rights and other corporate events, as described in the certificate of designation, or in connection with certain distributions of assets, as described in the certificate of designation, or as, when and if declared by the Company's Board of Directors acting in its sole and absolute discretion. Holders of the Series E Preferred Stock have no voting rights, except on matters required by law or under the certificate of designation to be submitted to a class vote of the Series E Preferred Stock.

In the event of any voluntary or involuntary liquidation, dissolution or winding up of the Company or other deemed liquidation event, the holders of the Series E Preferred Stock are entitled to receive, after any amount that is required to be paid to the Series C Preferred Stock and before any amount is paid to the holders of any of capital stock ranking junior to the Series E Preferred Stock, an amount per share equal to the greater of (i) 125% of the sum of the stated value plus any declared and unpaid dividends and late charges as provided in the certificate of designation, on the date of

Notes to Consolidated Financial Statements (Continued)

such payment and (ii) the amount per share such holder would receive if such holder converted such Series E Preferred Stock into common stock immediately prior to the date of such payment.

Series C Preferred Stock

The Company had 2,620 shares of Series C Preferred Stock outstanding at December 31, 2019 and 2018. The holder of the Series C Preferred Stock is entitled to receive dividends at a rate of 8.0% per annum, based on the original issue price per share of \$248.794, payable in equal quarterly installments in cash or in shares of common stock, at the Company's option. As of December 31, 2019 and December 31, 2018, respectively, all dividends have been paid in shares of common stock. Each share of Series C Preferred Stock is convertible into shares of common stock with the number of shares of common stock issuable upon conversion determined by dividing the original issue price per share of \$248.794 by the conversion price in effect at the time the shares are converted, provided that such conversion price shall not be less than \$0.1554 per share. The conversion price of the Series C Preferred Stock as of December 31, 2019 and December 31, 2018 was \$0.2343. The shares of Series C Preferred Stock vote together with the common stock on an as-converted basis on all matters.

In the event of any voluntary or involuntary liquidation, dissolution or winding up of the Company, or other deemed liquidation event, the holder of the Series C Preferred Stock will be entitled to be paid an amount per share equal to the greater of (i) the original issue price, plus any accrued but unpaid dividends or (ii) the amount per share that would have been payable had all shares of the Series C Preferred Stock been converted to shares of common stock immediately prior to such liquidation event. The Series C Preferred Stock is redeemable at the election of the holder of the Series C Stock or the Company. If the redemption is at the election of the holders of the Series C Preferred Stock, the redemption price will be the original issue price plus any accrued and unpaid dividends. If the redemption is at the election of the Company, the redemption price will be a per share price equal to the greater of (i) the original issue price per share plus any accrued and unpaid dividends and (ii) the fair market value of a single share of Series C Preferred Stock.

13. Warrant Transaction Agreements

Amazon Transaction Agreement

On April 4, 2017, the Company and Amazon entered into a Transaction Agreement (the Amazon Transaction Agreement), pursuant to which the Company agreed to issue to Amazon.com NV Investment Holdings LLC, a wholly owned subsidiary of Amazon, warrants to acquire up to 55,286,696 shares of the Company's common stock (the Amazon Warrant Shares), subject to certain vesting events described below. The Company and Amazon entered into the Amazon Transaction Agreement in connection with existing commercial agreements between the Company and Amazon with respect to the deployment of the Company's GenKey fuel cell technology at Amazon distribution centers. The existing commercial agreements contemplate, but do not guarantee, future purchase orders for the Company's fuel cell technology. The vesting of the Amazon Warrant Shares is linked to payments made by Amazon or its affiliates (directly or indirectly through third parties) pursuant to the existing commercial agreements.

The majority of the Amazon Warrant Shares will vest based on Amazon's payment of up to \$600.0 million to the Company in connection with Amazon's purchase of goods and services from the Company. The first tranche of 5,819,652 Amazon Warrant Shares vested upon the execution of the Amazon Transaction Agreement. Accordingly, \$6.7 million, the fair value of the first tranche of Amazon Warrant Shares, was recognized as selling, general and administrative expense on the consolidated statements of operations during 2017. All future provision for common stock warrants will be recorded in revenue. The second tranche of 29,098,260 Amazon Warrant Shares will vest in four installments of 7,274,565 Amazon Warrant Shares each time Amazon or its affiliates, directly or indirectly through third parties, make an aggregate of \$50.0 million in payments for goods and services to the Company, up to payments totaling \$200.0 million in the aggregate. The exercise price for the first and second tranches of Amazon Warrant Shares will be \$1.1893 per share. After Amazon has made payments to the Company totaling \$200.0 million, the third tranche of 20,368,784 Amazon Warrant Shares will vest in eight installments of 2,546,098 Amazon Warrant Shares each time Amazon or its affiliates, directly or indirectly through third parties, make an aggregate of \$50.0 million in payments for goods and services to the Company, up to payments totaling \$400.0 million in the aggregate. The exercise price of the third tranche of Amazon Warrant Shares will be an amount per share equal to ninety percent (90%) of the 30-day volume weighted average share price of the common stock

Notes to Consolidated Financial Statements (Continued)

as of the final vesting date of the second tranche of Amazon Warrant Shares. The Amazon Warrant Shares are exercisable through April 4, 2027.

The Amazon Warrant Shares provide for net share settlement that, if elected by the holders, will reduce the number of shares issued upon exercise to reflect net settlement of the exercise price. The Amazon Warrant Shares provide for certain adjustments that may be made to the exercise price and the number of shares of common stock issuable upon exercise due to customary anti-dilution provisions based on future events. These warrants are classified as equity instruments.

As of January 1, 2019, the Company's adoption of ASU 2019-08 requires these share-based payment awards granted to a customer to be measured and classified by applying the guidance of ASC Topic 718.

As a result, the amount recorded as a reduction in revenue is measured based on the grant-date fair value of the Amazon Warrant Shares, as opposed to the vesting date. The transition guidance of ASU 2019-08 specifies that equity instruments that are unvested and subject to its guidance as of the adoption date are to be measured at the adoption date fair value. See Equity Instruments in Note 2, Summary of Significant Accounting Policies for further information regarding the impact of adoption of ASU 2019-08.

At both December 31, 2019 and 2018, 20,368,782 of the Amazon Warrant Shares had vested. The amount of provision for common stock warrants recorded as a reduction of revenue for the Amazon Warrant during the years ended December 31, 2019 and 2018 was \$4.1 million and \$9.8 million, respectively.

Walmart Transaction Agreement

On July 20, 2017, the Company and Walmart entered into a Transaction Agreement (the Walmart Transaction Agreement), pursuant to which the Company agreed to issue to Walmart a warrant to acquire up to 55,286,696 shares of the Company's common stock, subject to certain vesting events (the Walmart Warrant Shares). The Company and Walmart entered into the Walmart Transaction Agreement in connection with existing commercial agreements between the Company and Walmart with respect to the deployment of the Company's GenKey fuel cell technology across various Walmart distribution centers. The existing commercial agreements contemplate, but do not guarantee, future purchase orders for the Company's fuel cell technology. The vesting of the warrant shares is linked to payments made by Walmart or its affiliates (directly or indirectly through third parties) pursuant to transactions entered into after January 1, 2017 under existing commercial agreements.

The majority of the Walmart Warrant Shares will vest based on Walmart's payment of up to \$600.0 million to the Company in connection with Walmart's purchase of goods and services from the Company. The first tranche of 5,819,652 Walmart Warrant Shares vested upon the execution of the Walmart Transaction Agreement. Accordingly, \$10.9 million, the fair value of the first tranche of Walmart Warrant Shares, was recorded as a provision for common stock warrants and presented as a reduction to revenue on the consolidated statements of operations during 2017. All future provision for common stock warrants will be recorded in revenue. The second tranche of 29,098,260 Walmart Warrant Shares will vest in four installments of 7,274,565 Walmart Warrant Shares each time Walmart or its affiliates, directly or indirectly through third parties, make an aggregate of \$50.0 million in payments for goods and services to the Company, up to payments totaling \$200.0 million in the aggregate. The exercise price for the first and second tranches of Walmart Warrant Shares will be \$2.1231 per share. After Walmart has made payments to the Company totaling \$200.0 million, the third tranche of 20,368,784 Walmart Warrant Shares will vest in eight installments of 2,546,098 Walmart Warrant Shares each time Walmart or its affiliates, directly or indirectly through third parties, make an aggregate of \$50.0 million in payments for goods and services to the Company, up to payments totaling \$400.0 million in the aggregate. The exercise price of the third tranche of Walmart Warrant Shares will be an amount per share equal to ninety percent (90%) of the 30-day volume weighted average share price of the common stock as of the final vesting date of the second tranche of Walmart Warrant Shares, provided that, with limited exceptions, the exercise price for the third tranche will be no lower than \$1.1893. The Walmart Warrant Shares are exercisable through July 20, 2027.

The Walmart Warrant Shares provide for net share settlement that, if elected by the holders, will reduce the number of shares issued upon exercise to reflect net settlement of the exercise price. The Walmart Warrant Shares provide for certain adjustments that may be made to the exercise price and the number of shares of common stock issuable upon

Notes to Consolidated Financial Statements (Continued)

exercise due to customary anti-dilution provisions based on future events. These warrants are classified as equity instruments.

As of January 1, 2019, the Company's adoption of ASU 2019-08 requires these share-based payment awards granted to a customer to be measured and classified by applying the guidance of ASC Topic 718.

As a result, the amount recorded as a reduction in revenue is measured based on the grant-date fair value of the Walmart Warrant Shares, as opposed to the vesting date. The transition guidance of ASU 2019-08 specifies that equity instruments that are unvested and subject to its guidance as of the adoption date are to be measured at the adoption date fair value. See Equity Instruments in Note 2, Summary of Significant Accounting Policies for further information regarding the impact of adoption of ASU 2019-08.

At both December 31, 2019 and 2018, 5,819,652 of the Walmart Warrant Shares had vested. The amount of provision for common stock warrants recorded as a reduction of revenue for the Walmart Warrant during the years ended December 31, 2019 and 2018 was \$2.4 million and \$0.4 million, respectively.

14. Revenue***Disaggregation of revenue***

The following table provides information about disaggregation of revenue (in thousands):

Major products/services lines

	Year ended December 31,		
	2019	2018	2017
Sales of fuel cell systems	\$ 130,721	\$ 75,146	\$ 49,206
Sale of hydrogen installations and other infrastructure	19,163	32,146	13,425
Services performed on fuel cell systems and related infrastructure	25,217	22,002	16,202
Power Purchase Agreements	25,853	22,869	12,869
Fuel delivered to customers	29,099	22,469	8,167
Other	186	—	284
Net revenue	<u>\$ 230,239</u>	<u>\$ 174,632</u>	<u>\$ 100,153</u>

Contract balances

The following table provides information about receivables, contract assets and contract liabilities from contracts with customers (in thousands):

	2019	2018
Accounts receivable	\$ 25,448	\$ 37,347
Contract assets	13,251	3,328
Contract liabilities	43,480	40,476

Contract assets relate to contracts for which revenue is recognized on a straight-line basis, however billings escalate over the life of a contract. Contract assets also include amounts recognized as revenue in advance of billings to customers, which are dependent upon the satisfaction of another performance obligation. These amounts are included in prepaid expenses and other assets on the consolidated balance sheet.

The contract liabilities relate to the advance consideration received from customers for services that will be recognized over time (primarily fuel cell and related infrastructure services). These amounts are included within deferred

Notes to Consolidated Financial Statements (Continued)

revenue on the consolidated balance sheet. Contract liabilities also include advance consideration received from customers prior to delivery of products. These amounts are included in other current liabilities on the consolidated balance sheet.

Significant changes in the contract assets and the contract liabilities balances during the period are as follows (in thousands):

Contract assets

	Year ended December 31, 2019	
Transferred to receivables from contract assets recognized at the beginning of the period	\$	(1,252)
Revenue recognized and not billed as of the end of the period		11,175
Net change in contract assets	\$	<u>9,923</u>

Contract liabilities

	Year ended December 31, 2019	
Revenue recognized that was included in the contract liability balance as of the beginning of the period	\$	(10,172)
Increases due to cash received, net of amounts recognized as revenue during the period		13,175
Net change in contract liabilities	\$	<u>3,003</u>

Estimated future revenue

The following table includes estimated revenue expected to be recognized in the future (sales of fuel cell systems and hydrogen installations are expected to be recognized as revenue within one year; sales of services and PPAs are expected to be recognized as revenue over five to seven years) related to performance obligations that are unsatisfied (or partially unsatisfied) at the end of the reporting period, excluding provision for common stock warrants as it is not readily estimable as it depends on the valuation of the common stock warrants when revenue is recognized (in thousands):

	Year ended December 31,	
	2019	2018
Sales of fuel cell systems	\$ 73,491	\$ 17,318
Sale of hydrogen installations and other infrastructure	72,862	9,141
Services performed on fuel cell systems and related infrastructure	87,020	73,381
Power Purchase Agreements	133,475	111,533
Other rental income	4,993	6,633
Total estimated future revenue	<u>\$ 371,841</u>	<u>\$ 218,006</u>

Contract costs

Contract costs consists of capitalized commission fees and other expenses related to obtaining or fulfilling a contract.

Capitalized contract costs at December 31, 2019 and 2018 were \$0.5 million and \$0.2, respectively. Expense related to the amortization of capitalized contract costs was not significant for the year ended December 31, 2019.

15. Employee Benefit Plans***2011 Stock Option and Incentive Plan***

On May 12, 2011, the Company's stockholders approved the 2011 Stock Option and Incentive Plan (the 2011 Plan). The 2011 Plan provided for the issuance of up to a maximum number of shares of common stock equal to the sum of (i) 1,000,000, plus (ii) the number of shares of common stock underlying any grants pursuant to the 2011 Plan or the Plug Power Inc. 1999 Stock Option and Incentive Plan that are forfeited, canceled, repurchased or are terminated (other

Notes to Consolidated Financial Statements (Continued)

than by exercise). The shares may be issued pursuant to stock options, stock appreciation rights, restricted stock awards and certain other equity-based awards granted to employees, directors and consultants of the Company. No grants may be made under the 2011 Plan after May 12, 2021. Through various amendments to the 2011 Plan approved by the Company's stockholders, the number of shares of the Company's common stock authorized for issuance under the 2011 Plan has been increased to 42.4 million. For the years ended December 31, 2019, 2018, and 2017, the Company recorded expense of approximately \$8.8 million, \$7.4 million, and \$9.0 million, respectively, in connection with the Third Amended and Restated 2011 Stock Option and Incentive Plan.

At December 31, 2019, there were outstanding options to purchase approximately 23.0 million shares of Common Stock and 8.4 million shares available for future awards under the 2011 Plan, including adjustments for other types of share-based awards. Options for employees issued under this plan generally vest in equal annual installments over three years and expire ten years after issuance. Options granted to members of the Board generally vest one year after issuance. To date, options granted under the 2011 Plan have vesting provisions ranging from one to three years in duration and expire ten years after issuance.

Compensation cost associated with employee stock options represented approximately \$6.0 million, \$6.4 million, and \$8.6 million of the total share-based payment expense recorded for the years ended December 31, 2019, 2018, and 2017, respectively. The Company estimates the fair value of stock options using a Black-Scholes valuation model, and the resulting fair value is recorded as compensation cost on a straight-line basis over the option vesting period. Key inputs and assumptions used to estimate the fair value of stock options include the grant price of the award, the expected option term, volatility of the Company's stock, an appropriate risk-free rate, and the Company's dividend yield. Estimates of fair value are not intended to predict actual future events or the value ultimately realized by employees who receive equity awards, and subsequent events are not indicative of the reasonableness of the original estimates of fair value made by the Company. The assumptions made for purposes of estimating fair value under the Black-Scholes model for the 3,221,892, 2,679,667 and 5,485,863 options granted during the years ended December 31, 2019, 2018 and 2017, respectively, were as follows:

	2019	2018	2017
Expected term of options (years)	6	6	6
Risk free interest rate	1.52% - 2.53%	2.81% - 2.88%	1.89% - 2.16%
Volatility	69.32% - 87.94%	98.31% - 98.89%	99.24% - 102.16%

There was no expected dividend yield for the employee stock options granted.

The Company's estimate of an expected option term was calculated in accordance with the simplified method for calculating the expected term assumption. The estimated stock price volatility was derived from the Company's actual historic stock prices over the past six years, which represents the Company's best estimate of expected volatility.

A summary of stock option activity for the year December 31, 2019 is as follows (in thousands except share amounts):

	Shares	Weighted Average Exercise Price	Weighted Average Remaining Contractual Terms	Aggregate Intrinsic Value
Options outstanding at December 31, 2018	21,957,150	\$ 2.51	7.1	\$ 1,432
Granted	3,221,892	2.40	—	—
Exercised	(1,151,307)	1.56	—	—
Forfeited	(934,195)	3.50	—	—
Expired	(79,950)	9.43	—	—
Options outstanding at December 31, 2019	23,013,590	\$ 2.48	6.6	\$ 22,277
Options exercisable at December 31, 2019	16,608,362	2.57	5.8	16,285
Options unvested at December 31, 2019	6,405,228	\$ 2.22	8.9	\$ 5,992

The weighted average grant-date fair value of options granted during the years ended December 31, 2019, 2018 and 2017 was \$1.67, \$1.55, and \$1.67, respectively. As of December 31, 2019, there was approximately \$8.1 million of

Notes to Consolidated Financial Statements (Continued)

unrecognized compensation cost related to stock option awards to be recognized over the next three years with all of this expected to vest. The total fair value of stock options that vested during the years ended December 31, 2019 and 2018 was approximately \$6.1 million and \$7.1 million, respectively.

Restricted stock awards generally vest in equal installments over a period of one to three years. Restricted stock awards are valued based on the closing price of the Company's common stock on the date of grant, and compensation cost is recorded on a straight-line basis over the share vesting period. The Company recorded expense associated with its restricted stock awards of approximately \$2.8 million, \$966 thousand, and \$335 thousand, for the years ended December 31, 2019, 2018 and 2017, respectively. Additionally, for the years ended December 31, 2019, 2018 and 2017, there was \$8.4 million, \$3.9 million, and \$208 thousand, respectively, of unrecognized compensation cost related to restricted stock awards to be recognized over the next three years.

A summary of restricted stock activity for the year ended December 31, 2019 is as follows (in thousands except share amounts):

	Shares	Aggregate Intrinsic Value
Unvested restricted stock at December 31, 2018	2,347,347	\$ —
Granted	3,201,892	—
Vested	(920,679)	—
Forfeited	(20,000)	—
Unvested restricted stock at December 31, 2019	4,608,560	\$ 14,563

401(k) Savings & Retirement Plan

The Company offers a 401(k) Savings & Retirement Plan to eligible employees meeting certain age and service requirements. This plan permits participants to contribute 100% of their salary, up to the maximum allowable by the Internal Revenue Service regulations. Participants are immediately vested in their voluntary contributions plus actual earnings or less actual losses thereon. Participants are vested in the Company's matching contribution based on years of service completed. Participants are fully vested upon completion of three years of service. During 2018, the Company began funding its matching contribution in a combination of cash and common stock. Accordingly, the Company has issued 841,539 shares and 633,827 shares of common stock to the Plug Power Inc. 401(k) Savings & Retirement Plan during 2019 and 2018, respectively.

The Company's expense for this plan was approximately \$1.9 million, \$1.8 million, and \$1.6 million for years ended December 31, 2019, 2018 and 2017, respectively.

Non-Employee Director Compensation

Each non-employee director is paid an annual retainer for their services, in the form of either cash or stock compensation. The Company granted 114,285, 107,389, and 148,077 shares of stock to non-employee directors as compensation for the years ended December 31, 2019, 2018, and 2017, respectively. All common stock issued is fully vested at the time of issuance and is valued at fair value on the date of issuance. The Company's share-based compensation expense for this plan was approximately \$243 thousand, \$261 thousand, and \$276 thousand for the years ended December 31, 2019, 2018, and 2017 respectively.

16. Fair Value Measurements

As of December 31, 2019, the Company had no financial instruments measured at fair value on a recurring basis. The following table summarizes the financial instruments measured at fair value on a recurring basis in the consolidated balance sheets (in thousands) at December 31, 2018:

	Total	Quoted Prices in Active Markets for Identical Items (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Other Unobservable Inputs (Level 3)
Common stock warrant liability	\$ 105	\$ —	\$ —	\$ 105

Notes to Consolidated Financial Statements (Continued)***Derivative Liabilities***

The Company's common stock warrant liability represents the only asset or liability classified financial instrument measured at fair value on a recurring basis in the consolidated balance sheets. The fair value measurement is determined by using Level 3 inputs due to the lack of active and observable markets that can be used to price identical assets. Level 3 inputs are unobservable inputs and should be used to determine fair value only when observable inputs are not available. Unobservable inputs should be developed based on the best information available in the circumstances, which might include internally generated data and assumptions being used to price the asset or liability.

Fair value of the common stock warrant liability is based on the Black-Scholes pricing model, which is based, in part, upon unobservable inputs for which there is little or no market data, requiring the Company to develop its own assumptions.

The Company used the following assumptions for its liability-classified common stock warrants for the year ended December 31, 2018:

Risk-free interest rate	1.64% - 2.66%
Volatility	18.40% - 81.69%
Expected average term	0.01 - 1.53

There was no expected dividend yield for the warrants granted.

If factors change and different assumptions are used, the warrant liability and the change in estimated fair value could be materially different. Generally, as the market price of our common stock increases, the fair value of the warrants increases, and conversely, as the market price of our common stock decreases, the fair value of the warrants decrease. Also, a significant increase in the volatility of the market price of the Company's common stock, in isolation, would result in significantly higher fair value measurements; and a significant decrease in volatility would result in significantly lower fair value measurements.

The following table shows the activity in the common stock warrant liability (in thousands):

	2019	2018
Beginning of period	\$ 105	\$ 4,391
Change in fair value of common stock warrants	(79)	(4,286)
Issuance of common stock warrants	—	—
Exercise of common stock warrants	(26)	—
End of period	\$ —	\$ 105

Equity Instruments

The fair value measurement of the Company's equity-classified common stock warrants further described in Note 13, Warrant Transaction Agreements, is determined by using Level 3 inputs due to the lack of active and observable markets that can be used to price identical instruments.

The Company adopted ASU 2019-08, with retrospective adoption as of January 1, 2019. As a result, the fair value is measured based on the grant-date of warrants. Prior to that, the fair value of the warrants was measured as of the vesting date using the Monte Carlo pricing model, which is based, in part, upon unobservable inputs for which there is little or no market data, requiring the Company to develop its own assumptions.

Notes to Consolidated Financial Statements (Continued)

The Company used the following assumptions for its equity-classified common stock warrants for the years ended December 31, 2019 and 2018:

	Year ended	
	January 1, 2019	December 31, 2018
Risk-free interest rate	2.60%-2.63%	2.60% - 3.02%
Volatility	0.95	75.00% - 85.00%
Expected average term	8.26-8.55	8.26 - 9.30

The Monte Carlo pricing models used in the determination of the fair value of the equity-classified warrants also incorporate assumptions involving future revenues associated with Amazon and Walmart, and related timing.

The following table represents the fair value per warrant on the execution date of the transaction agreements and as of December 31, 2019 and 2018:

	Amazon Warrant Shares	Walmart Warrant Shares
Issuance date - first tranche	\$ 1.15	\$ 1.88
As of vesting date - second tranche, first installment	2.16	—
As of vesting date - second tranche, second installment	1.54	—
As of December 2019 - second tranche	1.05	1.00
As of December 2018 - second tranche	0.98	0.92

17. Income Taxes

The components of loss before income taxes and the income tax benefit for the years ended December 31, 2019, 2018 and 2017, by jurisdiction, are as follows (in thousands):

	2019			2018			2017		
	U.S.	Foreign	Total	U.S.	Foreign	Total	U.S.	Foreign	Total
Loss before income taxes	\$ (83,910)	\$ (1,555)	\$ (85,465)	\$ (85,925)	\$ (1,407)	\$ (87,332)	\$ (125,871)	\$ (1,209)	\$ (127,080)
Income tax benefit	—	—	—	9,217	—	9,217	—	—	—
Net loss attributable to the Company	\$ (83,910)	\$ (1,555)	\$ (85,465)	\$ (76,708)	\$ (1,407)	\$ (78,115)	\$ (125,871)	\$ (1,209)	\$ (127,080)

The significant components of deferred income tax expense (benefit) for the years ended December 31, 2019, 2018 and 2017, by jurisdiction, are as follows (in thousands):

	2019			2018			2017		
	U.S.	Foreign	Total	U.S.	Foreign	Total	U.S.	Foreign	Total
Deferred tax (benefit) expense	\$ (8,910)	\$ (426)	\$ (9,336)	\$ (10,182)	\$ 933	\$ (9,249)	\$ 7,675	\$ (531)	\$ 7,144
Net operating loss carryforward generated	(7,254)	(270)	(7,524)	(10,038)	(665)	(10,703)	(19,117)	(17)	(19,134)
Rate change impact on net operating loss carryforwards	—	—	—	—	—	—	23,609	—	23,609
Valuation allowance increase (decrease)	16,164	696	16,860	11,003	(268)	10,735	(12,167)	548	(11,619)
Provision for income taxes	\$ —	\$ —	\$ —	\$ (9,217)	\$ —	\$ (9,217)	\$ —	\$ —	\$ —

Notes to Consolidated Financial Statements (Continued)

The Company's effective income tax rate differed from the federal statutory rate as follows:

	2019	2018	2017
U.S. Federal statutory tax rate	(21.0)%	(21.0)%	(35.0)%
Deferred state taxes	1.2 %	(1.9)%	(1.4)%
Common stock warrant liability	— %	(1.0)%	4.2 %
Provision to return and deferred tax asset adjustments	— %	— %	5.9 %
Change in U.S. Federal statutory tax rate	— %	— %	33.5 %
Other, net	(0.5)%	0.4 %	2.0 %
Change in valuation allowance	20.3 %	12.9 %	(9.2)%
	<u>0.0 %</u>	<u>(10.6)%</u>	<u>0.0 %</u>

Deferred income taxes reflect the net tax effects of temporary differences between the carrying amounts of certain assets and liabilities for financial reporting and the amounts used for income tax purposes. Significant components of the Company's deferred tax assets and liabilities as of December 31, 2019 and 2018 are as follows (in thousands):

	U.S.		Foreign		Total	
	2019	2018	2019	2018	2019	2018
Intangible assets	\$ —	\$ —	\$ 1,197	\$ 1,146	\$ 1,197	\$ 1,146
Deferred revenue	7,898	9,304	129	—	8,027	9,304
Interest expense	11,299	5,239	—	—	11,299	5,239
Other reserves and accruals	699	592	—	—	699	592
Tax credit carryforwards	2,590	1,865	1,253	1,200	3,843	3,065
Amortization of stock-based compensation	9,081	8,442	—	—	9,081	8,442
Non-compensatory warrants	4,322	3,597	—	—	4,322	3,597
Capitalized research & development expenditures	22,601	19,116	4,483	4,294	27,084	23,410
Right of use liability (operating leases)	39,237	16,715	—	—	39,237	16,715
Net operating loss carryforwards	54,947	49,058	9,576	9,306	64,523	58,364
Total deferred tax asset	152,674	113,928	16,638	15,946	169,312	129,874
Valuation allowance	(100,731)	(84,567)	(16,622)	(15,926)	(117,353)	(100,493)
Net deferred tax assets	<u>\$ 51,943</u>	<u>\$ 29,361</u>	<u>\$ 16</u>	<u>\$ 20</u>	<u>\$ 51,959</u>	<u>\$ 29,381</u>
Intangible assets	(15)	(37)	—	—	(15)	(37)
Convertible debt	(7,718)	(9,217)	—	—	(7,718)	(9,217)
Right of use asset (operating leases)	(40,298)	(18,066)	—	—	(40,298)	(18,066)
Other reserves and accruals	—	—	(16)	(20)	(16)	(20)
Property, plant and equipment and right of use assets	(3,912)	(2,041)	—	—	(3,912)	(2,041)
Deferred tax liability	<u>\$ (51,943)</u>	<u>\$ (29,361)</u>	<u>\$ (16)</u>	<u>\$ (20)</u>	<u>\$ (51,959)</u>	<u>\$ (29,381)</u>
Net	<u>\$ —</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$ —</u>

The Company has recorded a valuation allowance, as a result of uncertainties related to the realization of its net deferred tax asset, at December 31, 2019 and 2018 of approximately \$117.4 million and \$100.5 million, respectively. A reconciliation of the current year change in valuation allowance is as follows (in thousands):

	U.S.	Foreign	Total
Increase in valuation allowance for current year increase in net operating losses	\$ 7,254	\$ 368	\$ 7,622
Increase (decrease) in valuation allowance for current year net increase (decrease) in deferred tax assets other than net operating losses	11,845	(59)	11,786
Decrease in valuation allowance as a result of foreign currency fluctuation	(2,935)	—	(2,935)
Increase in valuation allowance due to change in tax rates	—	387	387
Net increase in valuation allowance	<u>\$ 16,164</u>	<u>\$ 696</u>	<u>\$ 16,860</u>

The deferred tax assets have been offset by a full valuation allowance because it is more likely than not that the tax benefits of the net operating loss carryforwards and other deferred tax assets may not be realized due to cumulative losses.

Notes to Consolidated Financial Statements (Continued)

Under Internal Revenue Code (IRC) Section 382, the use of loss carryforwards may be limited if a change in ownership of a company occurs. If it is determined that due to transactions involving the Company's shares owned by its 5 percent or greater stockholders a change of ownership has occurred under the provisions of IRC Section 382, the Company's federal and state net operating loss carryforwards could be subject to significant IRC Section 382 limitations.

Based on studies of the changes in ownership of the Company, it has been determined that an IRC Section 382 ownership change occurred in 2013 that limited the amount of pre-change net operating losses that can be used in future years to \$13.5 million. These net operating loss carryforwards will expire, if unused, at various dates from 2020 through 2033. Net operating losses of \$223.1 million incurred after the most recent ownership change are not subject to IRC Section 382 and are available for use in future years. Accordingly, the Company's deferred tax assets include \$236.6 million of U.S. net operating loss carryforwards. The net operating loss carryforwards available at December 31, 2019, include \$27.7 million of net operating loss that was generated in 2019 and \$42.2 million of net operating loss that was generated in 2018 that do not expire. The remainder, if unused, will expire at various dates from 2032 through 2037.

Approximately \$2.6 million of research credit carryforwards generated after the most recent IRC Section 382 ownership change are included in the Company's deferred tax assets. Due to limitations under IRC Section 382, research credit carryforwards existing prior to the most recent IRC Section 382 ownership change will not be used and are not reflected in the Company's gross deferred tax asset at December 31, 2019. The remaining credit carryforwards will expire during the periods 2033 through 2039.

At December 31, 2019, the Company has unused Canadian net operating loss carryforwards of approximately \$14.0 million. The net operating loss carryforwards if unused will expire at various dates from 2026 through 2034. At December 31, 2019, the Company has Scientific Research and Experimental Development (SR&ED) expenditures of \$17.2 million available to offset future taxable income. These (SR&ED) expenditures have no expiry date. At December 31, 2019, the Company has Canadian ITC credit carryforwards of \$1.3 million available to offset future income tax. These credit carryforwards if unused will expire at various dates from 2022 through 2028.

At December 31, 2019, the Company has unused French net operating loss carryforwards of approximately \$17.9 million. The net operating loss may carryforward indefinitely or until the Company changes its activity.

As of December 31, 2019, the Company has no un-repatriated foreign earnings or unrecognized tax benefits.

The Company files income tax returns in the U.S. federal jurisdiction and various state and foreign jurisdictions. In the normal course of business, the Company is subject to examination by taxing authorities. Open tax years in the US range from 2016 and forward. Open tax years in the foreign jurisdictions range from 2009 to 2018. However, upon examination in subsequent years, if net operating losses carryforwards and tax credit carryforwards are utilized, the US and foreign jurisdictions can reduce net operating loss carryforwards and tax credit carryforwards utilized in the year being examined if they do not agree with the carryforward amount. As of December 31, 2019, the Company was not under audit in the U.S. or non-U.S. taxing jurisdictions.

The Tax Cuts and Jobs Act, or the Act, was enacted on December 22, 2017. The Act makes broad and complex changes to the U.S. tax code including a reduction of the U.S. federal corporate tax rate from 35 percent to 21 percent effective for the 2018 tax year. Accordingly, federal deferred tax assets were adjusted in 2017 by \$42.5 million to reflect the reduction in tax rates. Also, in 2017 the valuation allowance was reduced by \$42.5 million resulting in no change to the net deferred tax asset. The deferred tax asset adjustments reduced the tax benefit of the current year losses by 33.5% as shown in the effective tax rate schedule. The valuation allowance rate impact includes an offsetting 33.5% for the tax rate reduction resulting in no change to the provision for income taxes.

18. Commitments and Contingencies

Lessor Obligations

As of December 31, 2019, the Company had noncancelable operating leases (as lessor), primarily associated with assets deployed at customer sites. These leases expire over the next one to seven years. Leases contain termination clauses with associated penalties, the amount of which cause the likelihood of cancellation to be remote.

Notes to Consolidated Financial Statements (Continued)

Future minimum lease payments under noncancelable operating leases (with initial or remaining lease terms in excess of one year) as of December 31, 2019 were as follows (in thousands):

2020	\$	31,279
2021		30,316
2022		22,432
2023		18,346
2024 and thereafter		36,095
Total future minimum lease payments	<u>\$</u>	<u>138,468</u>

Lessee Obligations

As of December 31, 2019, the Company had operating and finance leases, as lessee, primarily associated with sale/leaseback transactions that are partially secured by restricted cash, security deposits and pledged escrows (see also Note 1, Nature of Operations) as summarized below. These leases expire over the next one to nine years. Minimum rent payments under operating and finance leases are recognized on a straight-line basis over the term of the lease. Leases contain termination clauses with associated penalties, the amount of which cause the likelihood of cancellation to be remote.

In prior periods, the Company entered into sale/leaseback transactions that were accounted for as finance leases and reported as part of finance obligations. The outstanding balance of finance obligations related to sale/leaseback transactions at December 31, 2019 and December 31, 2018 was \$31.7 million and \$81.9 million, respectively. The fair value of the finance obligation approximated the carrying value as of both December 31, 2019 and December 31, 2018.

The Company has sold future services to be performed associated with certain sale/leaseback transactions and recorded the balance as a finance obligation. The outstanding balance of this obligation at December 31, 2019 was \$109.4 million, \$15.5 million and \$93.9 million of which was classified as short-term and long-term, respectively, on the accompanying consolidated balance sheet. The outstanding balance of this obligation at December 31, 2018 was \$37.0 million, \$5.7 million and \$31.3 million of which was classified as short-term and long-term, respectively. The amount is amortized using the effective interest method. The fair value of this finance obligation approximated the carrying value as of December 31, 2019.

The Company has a finance lease associated with its property and equipment in Latham, New York. Liabilities relating to this lease of \$2.2 million has been recorded as a finance obligation in the accompanying consolidated balance sheet as of December 31, 2019. The fair value of this finance obligation approximated the carrying value as of December 31, 2019.

Future minimum lease payments under operating and finance leases (with initial or remaining lease terms in excess of one year) as of December 31, 2019 were as follows (in thousands):

	Operating Leases	Finance Leases	Other Leased Property	Total Finance Obligations
2020	\$ 44,849	\$ 10,128	\$ 414	\$ 55,391
2021	44,919	9,276	407	54,602
2022	40,329	4,975	390	45,694
2023	35,738	3,150	366	39,254
2024 and thereafter	70,718	16,154	1,547	88,419
Total future minimum lease payments	236,553	43,683	3,124	283,360
Less imputed lease interest	(65,226)	(11,934)	(887)	(78,047)
Sale of future services	—	109,422	—	109,422
Total lease liabilities	<u>\$ 171,327</u>	<u>\$ 141,171</u>	<u>\$ 2,237</u>	<u>\$ 314,735</u>

Notes to Consolidated Financial Statements (Continued)

Rental expense for all operating leases was \$30.6 million and \$15.8 million for the years ended December 31, 2019 and 2018, respectively.

The gross profit on sale/leaseback transactions for all operating leases was \$26.2 million and \$16.4 million for the years ended December 31, 2019 and 2018, respectively. Right of use assets obtained in exchange for new operating lease liabilities was \$121.4 million and \$46.3 million for the years ended December 31, 2019 and 2018, respectively.

At December 31, 2019 and 2018, security deposits associated with sale/leaseback transactions were \$6.0 million and \$6.8 million, respectively, and were included in other assets in the consolidated balance sheet.

Other information related to the operating leases are presented in the following table:

	Year ended December 31, 2019	Year ended December 31, 2018
Cash payments (in thousands)	\$ 29,317	\$ 14,926
Weighted average remaining lease term (years)	5.61	4.36
Weighted average discount rate	12.1%	12.1%

Finance lease costs include amortization of the right of use assets (i.e. depreciation expense) and interest on lease liabilities (i.e. interest and other expense, net in the consolidated statement of operations). Finance lease costs were as follows (in thousands):

	Year ended December 31, 2019	Year ended December 31, 2018
Amortization of right of use asset	\$ 3,178	\$ 7,549
Interest on finance obligations	4,863	6,908
Total finance lease cost	<u>\$ 8,041</u>	<u>\$ 14,457</u>

Right of use assets obtained in exchange for new finance lease liabilities were \$5.9 million and \$2.2 million for the years ended December 31, 2019 and 2018, respectively.

Other information related to the finance leases are presented in the following table:

	Year ended December 31, 2019	Year ended December 31, 2018
Cash payments (in thousands)	\$ 61,237	\$ 33,715
Weighted average remaining lease term (years)	2.99	3.17
Weighted average discount rate	11.1%	11.8%

Restricted Cash

In connection with certain of the above noted sale/leaseback agreements, cash of \$125.1 million was required to be restricted as security as of December 31, 2019, which restricted cash will be released over the lease term. As of December 31, 2019, the Company also had certain letters of credit backed by security deposits totaling \$103.4 million that are security for the above noted sale/leaseback agreements.

The Company also had letters of credit in the aggregate amount of \$0.5 million at December 31, 2019 associated with a finance obligation from the sale/leaseback of its building. We consider cash collateralizing this letter of credit as restricted cash.

Notes to Consolidated Financial Statements (Continued)

Litigation

Legal matters are defended and handled in the ordinary course of business. The Company has established accruals for matters for which management considers a loss to be probable and reasonably estimable. It is the opinion of management that facts known at the present time do not indicate that such litigation, after taking into account insurance coverage and the aforementioned accruals, will have a material adverse impact on our results of operations, financial position, or cash flows.

Concentrations of credit risk

Concentrations of credit risk with respect to receivables exist due to the limited number of select customers with whom the Company has initial commercial sales arrangements. To mitigate credit risk, the Company performs appropriate evaluation of a prospective customer's financial condition.

At December 31, 2019, two customers comprised approximately 63.4% of the total accounts receivable balance. At December 31, 2018, two customers comprised approximately 52.3% of the total accounts receivable balance.

For the year ended December 31, 2019, 49.6% of total consolidated revenues were associated primarily with two customers. For the year ended December 31, 2018 66.7% of total consolidated revenues were associated primarily with two customers. For purposes of assigning a customer to a sale/leaseback transaction completed with a financial institution, the Company considers the end user of the assets to be the ultimate customer.

Notes to Consolidated Financial Statements (Continued)

19. Unaudited Quarterly Financial Data (in thousands, except per share data)

	Quarters ended			
	March 31, 2019	June 30, 2019	September 30, 2019	December 31, 2019
Net revenue (1):				
Sales of fuel cell systems and related infrastructure	\$ 2,544	\$ 38,696	\$ 38,877	\$ 69,767
Services performed on fuel cell systems and related infrastructure	6,343	5,341	6,205	7,328
Power Purchase Agreements	6,110	6,409	6,595	6,739
Fuel delivered to customers	6,582	7,089	7,649	7,779
Other	-	-	135	51
Net revenue	21,579	57,535	59,461	91,664
Gross (loss) profit	(3,784)	10,619	8,349	12,782
Operating expenses	16,697	22,560	18,428	20,323
Operating loss	(20,481)	(11,941)	(10,079)	(7,541)
Net loss attributable to common stockholders	(31,004)	(18,070)	(18,155)	(18,288)
Loss per share:				
Basic and Diluted	\$ (0.14)	\$ (0.07)	\$ (0.08)	\$ (0.07)

	Quarters ended			
	March 31, 2018	June 30, 2018	September 30, 2018	December 31, 2018
Net revenue (1):				
Sales of fuel cell systems and related infrastructure	\$ 10,613	\$ 18,820	\$ 36,668	\$ 41,191
Services performed on fuel cell systems and related infrastructure	5,483	5,691	5,156	5,672
Power Purchase Agreements	5,372	5,438	5,555	6,504
Fuel delivered to customers	4,950	5,280	5,786	6,453
Net revenue	26,418	35,229	53,165	59,820
Gross loss	(3,984)	(2,310)	4,409	4,507
Operating expenses	16,957	20,668	17,054	17,426
Operating loss	(20,941)	(22,978)	(12,645)	(12,919)
Net loss attributable to common stockholders	(19,848)	(25,881)	(15,578)	(16,860)
Loss per share:				
Basic and Diluted	\$ (0.09)	\$ (0.12)	\$ (0.07)	\$ (0.08)

- (1) The Company early-adopted Accounting Standards Update 2019-08, *Compensation – Stock Compensation (Topic 718) and Revenue from Contracts with Customers (Topic 606)* (ASU 2019-08), as of January 1, 2019 resulting in changes to previously reported 2019 interim financial information. See Note 2, Summary of Significant Accounting Policies, for details. Amounts related to 2018 were not impacted by the adoption of ASU 2019-08.

PLUG POWER INC.

**DESCRIPTION OF SECURITIES REGISTERED
UNDER SECTION 12 OF THE SECURITIES EXCHANGE ACT OF 1934, AS AMENDED**

Plug Power, Inc., a Delaware corporation, has one class of securities registered under Section 12 of the Securities Exchange Act of 1934, as amended, referred to herein as the Exchange Act: common stock, par value \$0.01 per share, referred to herein as the Common Stock. The following description sets forth certain material terms and provisions of the Common Stock. This description also summarizes relevant provisions of the Delaware General Corporation Law, referred to herein as the DGCL. The following summary does not purport to be complete and is subject to, and is qualified in its entirety by reference to, the applicable provisions of the DGCL and our Amended and Restated Certificate of Incorporation, as amended from time to time, referred to herein as the Certificate of Incorporation, and our Third Amended and Restated Bylaws, as amended from time to time, referred to herein as the Bylaws, copies of which are incorporated by reference as an exhibit to our Annual Report on Form 10-K of which this Exhibit 4.5 is a part. We encourage you to read the Certificate of Incorporation, the Bylaws and the applicable provisions of the DGCL for additional information. References in this Exhibit 4.5 to “Plug Power,” the “Company,” “we,” “our” or “us” refer to Plug Power Inc.

General*Authorized Shares*

The Certificate of Incorporation authorizes us to issue up to 755,000,000 shares, of which (i) 750,000,000 shares are classified as shares of Common Stock, and (ii) 5,000,000 shares are classified as preferred stock, par value \$0.01 per share, consisting of 170,000 shares of Series A Junior Participating Cumulative Preferred Stock, 10,431 shares of Series C Redeemable Convertible Preferred Stock, and 4,819,569 shares of undesignated preferred stock. As of December 31, 2019, there were no shares of Series A Junior Participating Cumulative Preferred Stock and 2,620 shares of Series C Redeemable Convertible Preferred Stock outstanding.

Power to Issue Additional Shares of Common Stock and Preferred Stock, and Reclassify Shares of Stock

Additional shares of authorized Common Stock and preferred stock may be issued, as authorized by our board of directors from time to time, without stockholder approval, except as may be required by applicable securities exchange requirements. The Certificate of Incorporation authorizes our board of directors to classify any unissued shares of preferred stock and to reclassify any previously classified but unissued shares of any series into other classes or series of stock. Prior to the issuance of shares of each class or series of preferred stock, the Company’s board of directors will set the terms, preferences, conversion or other rights, voting powers, restrictions, limitations as to dividends or other distributions, qualifications and terms or conditions of redemption for each such class or series.

Voting Rights

The holders of Common Stock possess exclusive voting rights in us, except to the extent of such rights reserved to holders of our Series C Redeemable Convertible Preferred Stock and to the extent our board of directors specifies voting power with respect to any other class of securities issued in the future. Each holder of our Common Stock is entitled to one vote for each share held of record on each matter submitted to a vote of stockholders, including the election of directors. Stockholders do not have any right to cumulate votes in the election of directors, therefore allowing the holders of a majority of the shares of Common Stock entitled to vote in any election of directors to elect all of the directors standing for election, if they should so choose.

Dividend and Liquidation Rights

Subject to the preferences that may be applicable to any then outstanding preferred stock, each holder of our Common Stock is entitled to share ratably in distributions to stockholders and to receive ratably such dividends, if any, as may be declared from time to time by our board of directors out of legally available funds. In the event of our liquidation, dissolution or winding up, holders of our Common Stock will be entitled to share ratably in the net assets legally available for distribution to stockholders after the payment of all of our debts and other liabilities, subject to the satisfaction of any liquidation preference granted to the holders of any outstanding shares of preferred stock (including the Series C Redeemable Convertible Preferred Stock).

Terms of Conversion, Sinking Fund Provisions, Redemption

All of the outstanding shares of Commons Stock are, and the shares of Common Stock issued upon the conversion of any securities convertible into our Common Stock will be, duly authorized, fully paid and nonassessable. Holders of our Common Stock have no preemptive, conversion or subscription rights, and there are no redemption or sinking fund provisions applicable to our Common Stock. The rights, preferences and privileges of the holders of our Common Stock are subject to, and may be adversely affected by, the rights of the holders of the Series C Redeemable Convertible Preferred Stock as well as the rights of any series of our preferred stock that we may designate and issue in the future.

Delaware Anti-Takeover Law and Provisions of our Certificate of Incorporation and Bylaws

Delaware Anti-Takeover Law

We are subject to Section 203 of the DGCL. Section 203 generally prohibits a public Delaware corporation from engaging in a “business combination” with an “interested stockholder” for a period of three years after the date of the transaction in which the person became an interested stockholder, unless:

- prior to the date of the transaction, the board of directors of the corporation approved either the business combination or the transaction which resulted in the stockholder becoming an interested stockholder;
- the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding for purposes of determining the number of shares outstanding (a) shares owned by persons who are directors and also officers and (b) shares owned by employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or
- on or subsequent to the date of the transaction, the business combination is approved by the board and authorized at an annual or special meeting of stockholders, and not by written consent, by the affirmative vote of at least two-thirds of the outstanding voting stock which is not owned by the interested stockholder.

Section 203 defines a business combination to include:

- any merger or consolidation involving the corporation and the interested stockholder;
- any sale, transfer, pledge or other disposition involving the interested stockholder of 10% or more of the assets of the corporation;
- subject to exceptions, any transaction that results in the issuance or transfer by the corporation of any stock of the corporation to the interested stockholder;
- and the receipt by the interested stockholder of the benefit of any loans, advances, guarantees, pledges or other financial benefits provided by or through the corporation.

In general, Section 203 defines an interested stockholder as any entity or person beneficially owning 15% or more of the outstanding voting stock of the corporation or any entity or person affiliated with or controlling or controlled by the entity or person.

Certificate of Incorporation and Bylaws

Provisions of our Certificate of Incorporation and Bylaws may delay or discourage transactions involving an actual or potential change in our control or change in our management, including transactions in which stockholders might otherwise receive a premium for their shares or transactions that our stockholders might otherwise deem to be in their best interests. Therefore, these provisions could adversely affect the price of our Common Stock. Among other things, our Certificate of Incorporation and Bylaws:

- permit our board of directors to issue up to 5,000,000 shares of preferred stock, with any rights, preferences and privileges as they may designate;
- provide that the authorized number of directors may be changed only by resolution of the board of directors;
- provide that all vacancies, including newly created directorships, may, except as otherwise required by law and subject to the rights of the holders of any series of preferred stock, be filled by the affirmative vote of a majority of directors then in office, even if less than a quorum;
- divide our board of directors into three classes;
- generally require that any action to be taken by our stockholders must be effected at a duly called annual or special meeting of stockholders and not be taken by written consent;
- provide that stockholders seeking to present proposals before a meeting of stockholders or to nominate candidates for election as directors at a meeting of stockholders must provide notice in writing in a timely manner, and also specify requirements as to the form and content of a stockholder's notice;
- do not provide for cumulative voting rights (therefore allowing the holders of a majority of the shares of Common Stock entitled to vote in any election of directors to elect all of the directors standing for election, if they should so choose); and
- provide that, except as otherwise required by statute and subject to the rights of the holders of any series of preferred stock, special meetings of our stockholders may be called only by the board of directors pursuant to a resolution adopted by a majority of the directors then in office.

The amendment of any of these provisions, with the exception of the ability of our board of directors to issue shares of preferred stock and designate any rights, preferences and privileges thereto, would require approval by the holders of at least two-thirds of our then outstanding Common Stock.

Transfer Agent and Registrar

The transfer agent and registrar for our Common Stock is Broadridge Corporate Issuer Solutions, Inc. The transfer agent and registrar's address is 1717 Arch Street, Suite 1300, Philadelphia, Pennsylvania, 19103.

Stock Exchange Listing

Our Common Stock trades on the NASDAQ Capital Market under the symbol "PLUG."

**PLUG POWER INC.
DIRECTOR INDEMNIFICATION AGREEMENT**

This Indemnification Agreement (this "Agreement") is made as of _____ by and between Plug Power Inc., a Delaware corporation (the "Company"), and _____ ("Indemnitee").

RECITALS

WHEREAS, the Company desires to attract and retain the services of highly qualified individuals, such as Indemnitee, to serve the Company;

WHEREAS, in order to induce Indemnitee to provide/continue to provide services to the Company, the Company wishes to provide for the indemnification of, and advancement of expenses to, Indemnitee to the maximum extent permitted by law;

WHEREAS, the Amended and Restated Certificate of Incorporation of the Company (the "Charter") and the Third Amended and Restated By-laws of the Company (the "Bylaws") require indemnification of the officers and directors of the Company, and Indemnitee may also be entitled to indemnification pursuant to the General Corporation Law of the State of Delaware (the "DGCL");

WHEREAS, the Charter, the Bylaws and the DGCL expressly provide that the indemnification provisions set forth therein are not exclusive, and thereby contemplate that contracts may be entered into between the Company and members of the board of directors, officers and other persons with respect to indemnification;

WHEREAS, the Board of Directors of the Company (the "Board") has determined that the increased difficulty in attracting and retaining highly qualified persons such as Indemnitee is detrimental to the best interests of the Company's stockholders;

WHEREAS, it is reasonable and prudent for the Company contractually to obligate itself to indemnify, and to advance expenses on behalf of, such persons to the fullest extent permitted by applicable law, regardless of any amendment or revocation of the Charter or the Bylaws, so that they will serve/continue to serve the Company free from undue concern that they will not be so indemnified; and

WHEREAS, this Agreement is a supplement to and in furtherance of the indemnification provided in the Charter, the Bylaws and any resolutions adopted pursuant thereto, and shall not be deemed a substitute therefor, nor to diminish or abrogate any rights of Indemnitee thereunder;

WHEREAS, the Indemnitee and the Company have previously entered into an Indemnification Agreement on or about a date commensurate with their appointment to the Board, this Indemnification Agreement supersedes the previous Agreement.

NOW, THEREFORE, in consideration of the premises and the covenants contained herein, the Company and Indemnitee do hereby covenant and agree as follows:

Section 1. Services to the Company. Indemnitee agrees to serve as a director of the Company. Indemnitee may at any time and for any reason resign from such position (subject to any other contractual obligation or any obligation imposed by law), in which event the Company shall have no obligation under this Agreement to continue Indemnitee in such position. This Agreement shall not be deemed an employment contract between the Company (or any of its subsidiaries or any Enterprise) and Indemnitee.

Section 2. Definitions.

As used in this Agreement:

(a) “Change in Control” shall be deemed to have occurred in any one of the following events:

(i) any “person,” as such term is used in Sections 13(d) and 14(d) of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), (other than the Company, any of its subsidiaries, any trustee, fiduciary or other person or entity holding securities under any employee benefit plan or trust of the Company or any of its subsidiaries, together with all Affiliates and Associates (as such terms are hereinafter defined) of such person), shall become the “beneficial owner” (as such term is defined in Rule 13d-3 of the Exchange Act), directly or indirectly, of securities of the Company representing 25% or more of the then outstanding shares of common stock of the Company (the “Stock”) (other than as a result of an acquisition of securities directly from the Company); or

(ii) persons who, as of the effective date of this Agreement (the “Effective Date”), constitute the Company’s Board of Directors (the “Incumbent Directors”) cease for any reason, including, without limitation, as a result of a tender offer, proxy contest, merger or similar transaction, to constitute at least a majority of the Board, provided that any person becoming a director of the Company subsequent to the Effective Date shall be considered an Incumbent Director if such person’s election was approved by or such person was nominated for election by either (A) a vote of at least a majority of the Incumbent Directors or (B) a vote of at least a majority of the Incumbent Directors who are members of a nominating committee comprised, in the majority, of Incumbent Directors; but provided further, that any such person whose initial assumption of office is in connection with an actual or threatened election contest relating to the election of members of the Board of Directors or other actual or threatened solicitation of proxies or consents by or on behalf of a Person other than the Board, including by reason of agreement intended to avoid or settle any such actual or threatened contest or solicitation, shall not be considered an Incumbent Director; or

(iii) Upon (A) the consummation of any consolidation or merger of the Company where the shareholders of the Company, immediately prior to the consolidation or merger, did not, immediately after the consolidation or merger, beneficially own (as

such term is defined in Rule 13d-3 of the Exchange Act), directly or indirectly, shares representing in the aggregate more than 50% of the voting shares of the corporation issuing cash or securities in the consolidation or merger (or of its ultimate parent corporation, if any), (B) the consummation of any sale, lease, exchange or other transfer (in one transaction or a series of transactions contemplated or arranged by any party as a single plan) of all or substantially all of the assets of the Company or (C) the completion of a liquidation or dissolution that has been approved by the stockholders of the Company.

(iv) For purposes of this Agreement, “Affiliate” and “Associate” shall have the respective meanings ascribed to such terms in Rule 12b-2 of the Exchange Act, as in effect on the date of this Agreement; provided, however, that no person who is a director or officer of the Company shall be deemed an Affiliate or an Associate of any other director or officer of the Company solely as a result of his position as director or officer of the Company.

(b) “Corporate Status” describes the status of a person as a current or former director of the Company or current or former director, manager, partner, officer, employee, agent or trustee of any other Enterprise which such person is or was serving at the request of the Company.

(c) “Enforcement Expenses” shall include all reasonable attorneys’ fees, court costs, transcript costs, fees of experts, travel expenses, duplicating costs, printing and binding costs, telephone charges, postage, delivery service fees, and all other out-of-pocket disbursements or expenses of the types customarily incurred in connection with an action to enforce indemnification or advancement rights, or an appeal from such action. Expenses, however, shall not include fees, salaries, wages or benefits owed to Indemnitee.

(d) “Enterprise” shall mean any corporation (other than the Company), partnership, joint venture, trust, employee benefit plan, limited liability company, or other legal entity of which Indemnitee is or was serving at the request of the Company as a director, manager, partner, officer, employee, agent or trustee.

(e) “Expenses” shall include all reasonable attorneys’ fees, court costs, transcript costs, fees of experts, travel expenses, duplicating costs, printing and binding costs, telephone charges, postage, delivery service fees, and all other out-of-pocket disbursements or expenses of the types customarily incurred in connection with prosecuting, defending, preparing to prosecute or defend, investigating, being or preparing to be a witness in, or otherwise participating in, a Proceeding or an appeal resulting from a Proceeding. Expenses, however, shall not include amounts paid in settlement by Indemnitee, the amount of judgments or fines against Indemnitee or fees, salaries, wages or benefits owed to Indemnitee.

(f) “Independent Counsel” means a law firm, or a partner (or, if applicable, member or shareholder) of such a law firm, that is experienced in matters of Delaware corporation law and neither presently is, nor in the past five (5) years has been, retained to represent: (i) the Company, any subsidiary of the Company, any Enterprise or Indemnitee in any matter material to

any such party; or (ii) any other party to the Proceeding giving rise to a claim for indemnification hereunder. Notwithstanding the foregoing, the term “Independent Counsel” shall not include any person who, under the applicable standards of professional conduct then prevailing, would have a conflict of interest in representing either the Company or Indemnatee in an action to determine Indemnatee’s rights under this Agreement. The Company agrees to pay the reasonable fees and expenses of the Independent Counsel referred to above and to fully indemnify such counsel against any and all expenses, claims, liabilities and damages arising out of or relating to this Agreement or its engagement pursuant hereto.

(g) The term “Proceeding” shall include any threatened, pending or completed action, suit, arbitration, alternate dispute resolution mechanism, investigation, inquiry, administrative hearing or any other actual, threatened or completed proceeding, whether brought in the right of the Company or otherwise and whether of a civil, criminal, administrative, regulatory or investigative nature, and whether formal or informal, in which Indemnatee was, is or will be involved as a party or otherwise by reason of the fact that Indemnatee is or was a director of the Company or is or was serving at the request of the Company as a director, manager, partner, officer, employee, agent or trustee of any Enterprise or by reason of any action taken by Indemnatee or of any action taken on his or her part while acting as a director of the Company or while serving at the request of the Company as a director, manager, partner, officer, employee, agent or trustee of any Enterprise, in each case whether or not serving in such capacity at the time any liability or expense is incurred for which indemnification, reimbursement or advancement of expenses can be provided under this Agreement; provided, however, that the term “Proceeding” shall not include any action, suit or arbitration, or part thereof, initiated by Indemnatee to enforce Indemnatee’s rights under this Agreement as provided for in Section 12(a) of this Agreement.

Section 3. Indemnity in Third-Party Proceedings. The Company shall indemnify Indemnatee to the extent set forth in this Section 3 if Indemnatee is, or is threatened to be made, a party to or a participant in any Proceeding, other than a Proceeding by or in the right of the Company to procure a judgment in its favor. Pursuant to this Section 3, Indemnatee shall be indemnified against all Expenses, judgments, fines, penalties, excise taxes, and amounts paid in settlement actually and reasonably incurred by Indemnatee or on his or her behalf in connection with such Proceeding or any claim, issue or matter therein, if Indemnatee acted in good faith and in a manner he or she reasonably believed to be in or not opposed to the best interests of the Company and, in the case of a criminal proceeding, had no reasonable cause to believe that his or her conduct was unlawful.

Section 4. Indemnity in Proceedings by or in the Right of the Company. The Company shall indemnify Indemnatee to the extent set forth in this Section 4 if Indemnatee is, or is threatened to be made, a party to or a participant in any Proceeding by or in the right of the Company to procure a judgment in its favor. Pursuant to this Section 4, Indemnatee shall be indemnified against all Expenses actually and reasonably incurred by Indemnatee or on his or her behalf in connection with such Proceeding or any claim, issue or matter therein, if Indemnatee acted in good faith and in a manner he or she reasonably believed to be in or not opposed to the best interests of the Company. No indemnification for Expenses shall be made under this Section 4 in respect of any claim, issue or matter as to which Indemnatee shall have been finally adjudged by a court to be liable to the Company, unless and only to the extent that the Delaware Court of Chancery (the

“Delaware Court”) shall determine upon application that, despite the adjudication of liability but in view of all the circumstances of the case, Indemnitee is fairly and reasonably entitled to indemnification for such expenses as the Delaware Court shall deem proper.

Section 5. Indemnification for Expenses of a Party Who is Wholly or Partly Successful. Notwithstanding any other provisions of this Agreement and except as provided in Section 7, to the extent that Indemnitee is a party to or a participant in any Proceeding and is successful in such Proceeding or in defense of any claim, issue or matter therein, the Company shall indemnify Indemnitee against all Expenses actually and reasonably incurred by him or her in connection therewith. If Indemnitee is not wholly successful in such Proceeding but is successful as to one or more but less than all claims, issues or matters in such Proceeding, the Company shall indemnify Indemnitee against all Expenses actually and reasonably incurred by Indemnitee or on his or her behalf in connection with each successfully resolved claim, issue or matter. For purposes of this Section and without limitation, the termination of any claim, issue or matter in such a Proceeding by dismissal, with or without prejudice, shall be deemed to be a successful result as to such claim, issue or matter.

Section 6. Reimbursement for Expenses of a Witness or in Response to a Subpoena. Notwithstanding any other provision of this Agreement, to the extent that Indemnitee, by reason of his or her Corporate Status, (i) is a witness in any Proceeding to which Indemnitee is not a party and is not threatened to be made a party or (ii) receives a subpoena with respect to any Proceeding to which Indemnitee is not a party and is not threatened to be made a party, the Company shall reimburse Indemnitee for all Expenses actually and reasonably incurred by him or her or on his or her behalf in connection therewith.

Section 7. Exclusions. Notwithstanding any provision in this Agreement to the contrary, the Company shall not be obligated under this Agreement:

(a) to indemnify for amounts otherwise indemnifiable hereunder (or for which advancement is provided hereunder) if and to the extent that Indemnitee has otherwise actually received such amounts under any insurance policy, contract, agreement or otherwise;

(b) to indemnify for an accounting of profits made from the purchase and sale (or sale and purchase) by Indemnitee of securities of the Company within the meaning of Section 16(b) of the Securities Exchange Act of 1934, as amended, or similar provisions of state statutory law or common law, or from the purchase or sale by Indemnitee of such securities in violation of Section 306 of the Sarbanes-Oxley Act of 2002 (“SOX”);

(c) to indemnify with respect to any Proceeding, or part thereof, brought by Indemnitee against the Company, any legal entity which it controls, any director or officer thereof or any third party, unless (i) the Board has consented to the initiation of such Proceeding or part thereof and (ii) the Company provides the indemnification, in its sole discretion, pursuant to the powers vested in the Company under applicable law; provided, however, that this Section 7(d) shall not apply to (A) counterclaims or affirmative defenses asserted by Indemnitee in an action brought against Indemnitee or (B) any action brought by Indemnitee for indemnification or advancement from the Company under this Agreement or under any directors’ and officers’ liability insurance policies maintained by the Company in the suit for which indemnification or advancement is being sought as described in Section 12; or

(e) to provide any indemnification or advancement of expenses that is prohibited by applicable law (as such law exists at the time payment would otherwise be required pursuant to this Agreement).

Section 8. Advancement of Expenses. Subject to Section 9(b), the Company shall advance, to the extent not prohibited by law, the Expenses incurred by Indemnitee in connection with any Proceeding, and such advancement shall be made within forty-five (45) days after the receipt by the Company of a statement or statements requesting such advances (including any invoices received by Indemnitee, which such invoices may be redacted as necessary to avoid the waiver of any privilege accorded by applicable law) from time to time, whether prior to or after final disposition of any Proceeding. Advances shall be unsecured and interest free. Advances shall be made without regard to Indemnitee's (i) ability to repay the expenses, (ii) ultimate entitlement to indemnification under the other provisions of this Agreement, and (iii) entitlement to and availability of insurance coverage, including advancement, payment or reimbursement of defense costs, expenses or covered loss under the provisions of any applicable insurance policy (including, without limitation, whether such advancement, payment or reimbursement is withheld, conditioned or delayed by the insurer(s)). Indemnitee shall qualify for advances upon the execution and delivery to the Company of this Agreement which shall constitute an undertaking providing that Indemnitee undertakes to the fullest extent required by law to repay the advance if and to the extent that it is ultimately determined by a court of competent jurisdiction in a final judgment, not subject to appeal, that Indemnitee is not entitled to be indemnified by the Company. The right to advances under this paragraph shall in all events continue until final disposition of any Proceeding, including any appeal therein. Nothing in this Section 8 shall limit Indemnitee's right to advancement pursuant to Section 12(e) of this Agreement.

Section 9. Procedure for Notification and Defense of Claim.

(a) To obtain indemnification under this Agreement, Indemnitee shall submit to the Company a written request therefor specifying the basis for the claim, the amounts for which Indemnitee is seeking payment under this Agreement, and all documentation related thereto as reasonably requested by the Company.

(b) In the event that the Company shall be obligated hereunder to provide indemnification for or make any advancement of Expenses with respect to any Proceeding, the Company shall be entitled to assume the defense of such Proceeding, or any claim, issue or matter therein, with counsel approved by Indemnitee (which approval shall not be unreasonably withheld or delayed) upon the delivery to Indemnitee of written notice of the Company's election to do so. After delivery of such notice, approval of such counsel by Indemnitee and the retention of such counsel by the Company, the Company will not be liable to Indemnitee under this Agreement for any fees or expenses of separate counsel subsequently employed by or on behalf of Indemnitee with respect to the same Proceeding; provided that (i) Indemnitee shall have the right to employ separate counsel in any such Proceeding at Indemnitee's expense and (ii) if (A) the employment of separate counsel by Indemnitee has been previously authorized by the Company, (B) Indemnitee shall have reasonably concluded that there may be a conflict of interest between the Company and Indemnitee in the conduct of such defense, or (C) the Company shall not continue to retain such

counsel to defend such Proceeding, then the fees and expenses actually and reasonably incurred by Indemnitee with respect to his or her separate counsel shall be Expenses hereunder.

(c) In the event that the Company does not assume the defense in a Proceeding pursuant to paragraph (b) above, then the Company will be entitled to participate in the Proceeding at its own expense.

(d) The Company shall not be liable to indemnify Indemnitee under this Agreement for any amounts paid in settlement of any Proceeding effected without its prior written consent (which consent shall not be unreasonably withheld or delayed). Without limiting the generality of the foregoing, the fact that an insurer under an applicable insurance policy delays or is unwilling to consent to such settlement or is or may be in breach of its obligations under such policy, or the fact that directors' and officers' liability insurance is otherwise unavailable or not maintained by the Company, may not be taken into account by the Company in determining whether to provide its consent. The Company shall not, without the prior written consent of Indemnitee (which consent shall not be unreasonably withheld or delayed), enter into any settlement which (i) includes an admission of fault of Indemnitee, any non-monetary remedy imposed on Indemnitee or any monetary damages for which Indemnitee is not wholly and actually indemnified hereunder or (ii) with respect to any Proceeding with respect to which Indemnitee may be or is made a party or may be otherwise entitled to seek indemnification hereunder, does not include the full release of Indemnitee from all liability in respect of such Proceeding.

Section 10. Procedure Upon Application for Indemnification.

(a) Upon written request by Indemnitee for indemnification pursuant to Section 9(a), a determination, if such determination is required by applicable law, with respect to Indemnitee's entitlement to indemnification hereunder shall be made in the specific case by one of the following methods: (x) if a Change in Control shall have occurred, by Independent Counsel in a written opinion to the Board; or (y) if a Change in Control shall not have occurred: (i) by a majority vote of the disinterested directors, even though less than a quorum; (ii) by a committee of disinterested directors designated by a majority vote of the disinterested directors, even though less than a quorum; or (iii) if there are no disinterested directors or if the disinterested directors so direct, by Independent Counsel in a written opinion to the Board. For purposes hereof, disinterested directors are those members of the Board who are not parties to the action, suit or proceeding in respect of which indemnification is sought. In the case that such determination is made by Independent Counsel, a copy of Independent Counsel's written opinion shall be delivered to Indemnitee and, if it is so determined that Indemnitee is entitled to indemnification, payment to Indemnitee shall be made within forty-five (45) days after such determination. Indemnitee shall cooperate with the Independent Counsel or the Company, as applicable, in making such determination with respect to Indemnitee's entitlement to indemnification, including providing to such counsel or the Company, upon reasonable advance request, any documentation or information which is not privileged or otherwise protected from disclosure and which is reasonably available to Indemnitee and reasonably necessary to such determination. Any out-of-pocket costs or expenses (including reasonable attorneys' fees and disbursements) actually and reasonably incurred by Indemnitee in so cooperating with the Independent Counsel or the Company shall be borne by the Company (irrespective of the determination as to Indemnitee's entitlement to

indemnification) and the Company hereby indemnifies and agrees to hold Indemnitee harmless therefrom.

(b) If the determination of entitlement to indemnification is to be made by Independent Counsel pursuant to Section 10(a), the Independent Counsel shall be selected by the Board if a Change in Control shall not have occurred or, if a Change in Control shall have occurred, by Indemnitee. Indemnitee or the Company, as the case may be, may, within ten (10) days after written notice of such selection, deliver to the Company or Indemnitee, as the case may be, a written objection to such selection; provided, however, that such objection may be asserted only on the ground that the Independent Counsel so selected does not meet the requirements of "Independent Counsel" as defined in Section 2 of this Agreement, and the objection shall set forth with particularity the factual basis of such assertion. Absent a proper and timely objection, the person so selected shall act as Independent Counsel. If such written objection is so made and substantiated, the Independent Counsel so selected may not serve as Independent Counsel unless and until such objection is withdrawn or the Delaware Court has determined that such objection is without merit. If, within twenty (20) days after the later of (i) submission by Indemnitee of a written request for indemnification pursuant to Section 9(a), and (ii) the final disposition of the Proceeding, including any appeal therein, no Independent Counsel shall have been selected without objection, either Indemnitee or the Company may petition the Delaware Court for resolution of any objection which shall have been made by Indemnitee or the Company to the selection of Independent Counsel and/or for the appointment as Independent Counsel of a person selected by the court or by such other person as the court shall designate. The person with respect to whom all objections are so resolved or the person so appointed shall act as Independent Counsel under Section 10(a) hereof. Upon the due commencement of any judicial proceeding or arbitration pursuant to Section 12(a) of this Agreement, Independent Counsel shall be discharged and relieved of any further responsibility in such capacity (subject to the applicable standards of professional conduct then prevailing).

(c) Notwithstanding anything to the contrary contained in this Agreement, the determination of entitlement to indemnification under this Agreement shall be made without regard to the Indemnitee's entitlement to and availability of insurance coverage, including advancement, payment or reimbursement of defense costs, expenses or covered loss under the provisions of any applicable insurance policy (including, without limitation, whether such advancement, payment or reimbursement is withheld, conditioned or delayed by the insurer(s)).

Section 11. Presumptions and Effect of Certain Proceedings.

(a) To the extent permitted by applicable law, in making a determination with respect to entitlement to indemnification hereunder, it shall be presumed that Indemnitee is entitled to indemnification under this Agreement if Indemnitee has submitted a request for indemnification in accordance with Section 9(a) of this Agreement, and the Company shall have the burden of proof to overcome that presumption in connection with the making of any determination contrary to that presumption.

(b) The termination of any Proceeding or of any claim, issue or matter therein, by judgment, order, settlement or conviction, or upon a plea of guilty, nolo contendere or its equivalent, shall not (except as otherwise expressly provided in this Agreement) of itself adversely affect the right of Indemnitee to indemnification or create a presumption that Indemnitee did not

act in good faith and in a manner which he or she reasonably believed to be in or not opposed to the best interests of the Company or, with respect to any criminal Proceeding, that Indemnitee had reasonable cause to believe that his or her conduct was unlawful.

(c) The knowledge and/or actions, or failure to act, of any director, manager, partner, officer, employee, agent or trustee of the Company, any subsidiary of the Company, or any Enterprise shall not be imputed to Indemnitee for purposes of determining the right to indemnification under this Agreement.

Section 12. Remedies of Indemnitee.

(a) Subject to Section 12(f), in the event that (i) a determination is made pursuant to Section 10 of this Agreement that Indemnitee is not entitled to indemnification under this Agreement, (ii) advancement of Expenses is not timely made pursuant to Section 8 of this Agreement, (iii) no determination of entitlement to indemnification shall have been made pursuant to Section 10(a) of this Agreement within sixty (60) days after receipt by the Company of the request for indemnification for which a determination is to be made other than by Independent Counsel, (iv) payment of indemnification or reimbursement of expenses is not made pursuant to Section 5 or 6 or the last sentence of Section 10(a) of this Agreement within forty-five (45) days after receipt by the Company of a written request therefor (including any invoices received by Indemnitee, which such invoices may be redacted as necessary to avoid the waiver of any privilege accorded by applicable law) or (v) payment of indemnification pursuant to Section 3 or 4 of this Agreement is not made within forty-five (45) days after a determination has been made that Indemnitee is entitled to indemnification, Indemnitee shall be entitled to an adjudication by the Delaware Court of his or her entitlement to such indemnification or advancement. Alternatively, Indemnitee, at his or her option, may seek an award in arbitration to be conducted by a single arbitrator pursuant to the Commercial Arbitration Rules of the American Arbitration Association. Indemnitee shall commence such proceeding seeking an adjudication or an award in arbitration within 180 days following the date on which Indemnitee first has the right to commence such proceeding pursuant to this Section 12(a); provided, however, that the foregoing time limitation shall not apply in respect of a proceeding brought by Indemnitee to enforce his or her rights under Section 5 of this Agreement. The Company shall not oppose Indemnitee's right to seek any such adjudication or award in arbitration.

(b) In the event that a determination shall have been made pursuant to Section 10(a) of this Agreement that Indemnitee is not entitled to indemnification, any judicial proceeding or arbitration commenced pursuant to this Section 12 shall be conducted in all respects as a de novo trial, or arbitration, on the merits and Indemnitee shall not be prejudiced by reason of that adverse determination. In any judicial proceeding or arbitration commenced pursuant to this Section 12, the Company shall have the burden of proving Indemnitee is not entitled to indemnification or advancement, as the case may be.

(c) If a determination shall have been made pursuant to Section 10(a) of this Agreement that Indemnitee is entitled to indemnification, the Company shall be bound by such determination in any judicial proceeding or arbitration commenced pursuant to this Section 12, absent (i) a misstatement by Indemnitee of a material fact, or an omission of a material fact necessary to make Indemnitee's statement not materially misleading, in connection with the request for indemnification, or (ii) a prohibition of such indemnification under applicable law.

(d) The Company shall be precluded from asserting in any judicial proceeding or arbitration commenced pursuant to this Section 12 that the procedures and presumptions of this Agreement are not valid, binding and enforceable and shall stipulate in any such court or before any such arbitrator that the Company is bound by all the provisions of this Agreement.

(e) The Company shall indemnify Indemnitee to the fullest extent permitted by law against any and all Enforcement Expenses and, if requested by Indemnitee, shall (within forty-five (45) days after receipt by the Company of a written request therefor) advance, to the extent not prohibited by law, such Enforcement Expenses to Indemnitee, which are incurred by Indemnitee in connection with any action brought by Indemnitee for indemnification or advancement from the Company under this Agreement or under any directors' and officers' liability insurance policies maintained by the Company in the suit for which indemnification or advancement is being sought. Such written request for advancement shall include invoices received by Indemnitee in connection with such Enforcement Expenses but, in the case of invoices in connection with legal services, any references to legal work performed or to expenditures made that would cause Indemnitee to waive any privilege accorded by applicable law need not be included with the invoice.

(f) Notwithstanding anything in this Agreement to the contrary, no determination as to entitlement to indemnification under this Agreement shall be required to be made prior to the final disposition of the Proceeding, including any appeal therein.

Section 13. Non-exclusivity; Survival of Rights; Insurance; Subrogation.

(a) The rights of indemnification and to receive advancement as provided by this Agreement shall not be deemed exclusive of any other rights to which Indemnitee may at any time be entitled under applicable law, the Charter, the Bylaws, any agreement, a vote of stockholders or a resolution of directors, or otherwise. No amendment, alteration or repeal of this Agreement or of any provision hereof shall limit or restrict any right of Indemnitee under this Agreement in respect of any action taken or omitted by such Indemnitee in his or her Corporate Status prior to such amendment, alteration or repeal. To the extent that a change in Delaware law, whether by statute or judicial decision, permits greater indemnification or advancement than would be afforded currently under the Charter, Bylaws and this Agreement, it is the intent of the parties hereto that Indemnitee shall enjoy by this Agreement the greater benefits so afforded by such change. No right or remedy herein conferred is intended to be exclusive of any other right or remedy, and every other right and remedy shall be cumulative and in addition to every other right and remedy given hereunder or now or hereafter existing at law or in equity or otherwise. The assertion or employment of any right or remedy hereunder, or otherwise, shall not prevent the concurrent assertion or employment of any other right or remedy.

(b) To the extent that the Company maintains an insurance policy or policies providing liability insurance for directors, managers, partners, officers, employees, agents or trustees of the Company or of any other Enterprise, Indemnitee shall be covered by such policy or policies in accordance with its or their terms to the maximum extent of the coverage available for any such director, manager, partner, officer, employee, agent or trustee under such policy or policies. If, at the time of the receipt of a notice of a claim pursuant to the terms hereof, the

Company has director and officer liability insurance in effect, the Company shall give prompt notice of the commencement of such proceeding to the insurers in accordance with the procedures set forth in the respective policies.

(c) In the event of any payment under this Agreement, the Company shall be subrogated to the extent of such payment to all of the rights of recovery of Indemnitee, who shall execute all papers required and take all action necessary to secure such rights, including execution of such documents as are necessary to enable the Company to bring suit to enforce such rights.

(d) The Company's obligation to provide indemnification or advancement hereunder to Indemnitee who is or was serving at the request of the Company as a director, manager, partner, officer, employee, agent or trustee of any other Enterprise shall be reduced by any amount Indemnitee has actually received as indemnification or advancement from such other Enterprise.

Section 14. Duration of Agreement. This Agreement shall continue until and terminate upon the later of: (a) ten (10) years after the date that Indemnitee shall have ceased to serve as a director of the Company or (b) one (1) year after the final termination of any Proceeding, including any appeal, then pending in respect of which Indemnitee is granted rights of indemnification or advancement hereunder and of any proceeding commenced by Indemnitee pursuant to Section 12 of this Agreement relating thereto. This Agreement shall be binding upon the Company and its successors and assigns and shall inure to the benefit of Indemnitee and his or her heirs, executors and administrators. The Company shall require and cause any successor (whether direct or indirect by purchase, merger, consolidation or otherwise) to all, substantially all or a substantial part, of the business and/or assets of the Company, by written agreement in form and substance satisfactory to Indemnitee, expressly to assume and agree to perform this Agreement in the same manner and to the same extent that the Company would be required to perform if no such succession had taken place.

Section 15. Severability. If any provision or provisions of this Agreement shall be held to be invalid, illegal or unenforceable for any reason whatsoever: (a) the validity, legality and enforceability of the remaining provisions of this Agreement (including, without limitation, each portion of any section of this Agreement containing any such provision held to be invalid, illegal or unenforceable, that is not itself invalid, illegal or unenforceable) shall not in any way be affected or impaired thereby and shall remain enforceable to the fullest extent permitted by law; (b) such provision or provisions shall be deemed reformed to the extent necessary to conform to applicable law and to give the maximum effect to the intent of the parties hereto; and (c) to the fullest extent possible, the provisions of this Agreement (including, without limitation, each portion of any section of this Agreement containing any such provision held to be invalid, illegal or unenforceable, that is not itself invalid, illegal or unenforceable) shall be construed so as to give effect to the intent manifested thereby.

Section 16. Enforcement.

(a) The Company expressly confirms and agrees that it has entered into this Agreement and assumed the obligations imposed on it hereby in order to induce Indemnitee to serve/continue to serve as a director of the Company, and the Company acknowledges that Indemnitee is relying upon this Agreement in serving as a director of the Company.

(b) This Agreement constitutes the entire agreement between the parties hereto with respect to the subject matter hereof and supersedes all prior agreements and understandings, oral, written and implied, between the parties hereto with respect to the subject matter hereof; provided, however, that this Agreement is a supplement to and in furtherance of the Charter, the Bylaws and applicable law, and shall not be deemed a substitute therefor, nor to diminish or abrogate any rights of Indemnatee thereunder.

Section 17. Modification and Waiver. No supplement, modification or amendment, or waiver of any provision, of this Agreement shall be binding unless executed in writing by the parties thereto. No waiver of any of the provisions of this Agreement shall be deemed or shall constitute a waiver of any other provisions of this Agreement nor shall any waiver constitute a continuing waiver. No supplement, modification or amendment of this Agreement or of any provision hereof shall limit or restrict any right of Indemnatee under this Agreement in respect of any action taken or omitted by such Indemnatee prior to such supplement, modification or amendment.

Section 18. Notice by Indemnatee. Indemnatee agrees promptly to notify the Company in writing upon being served with any summons, citation, subpoena, complaint, indictment, information or other document relating to any Proceeding or matter which may be subject to indemnification, reimbursement or advancement as provided hereunder. The failure of Indemnatee to so notify the Company shall not relieve the Company of any obligation which it may have to Indemnatee under this Agreement or otherwise.

Section 19. Notices. All notices, requests, demands and other communications under this Agreement shall be in writing and shall be deemed to have been duly given if (i) delivered by hand and receipted for by the party to whom said notice or other communication shall have been directed, (ii) mailed by certified or registered mail with postage prepaid, on the third business day after the date on which it is so mailed, (iii) mailed by reputable overnight courier and receipted for by the party to whom said notice or other communication shall have been directed or (iv) sent by facsimile transmission, with receipt of oral confirmation that such transmission has been received:

(a) If to Indemnatee, at such address as Indemnatee shall provide to the Company.

(b) If to the Company to:

Plug Power Inc.
968 Albany Shaker Road
Latham, New York 12110
(518) 782-7700
Attention: Gerard L. Conway Jr., Esq., General Counsel

or to any other address as may have been furnished to Indemnatee by the Company.

Section 20. Contribution. To the fullest extent permissible under applicable law, if the indemnification provided for in this Agreement is unavailable to Indemnatee for any reason whatsoever, the Company, in lieu of indemnifying Indemnatee, shall contribute to the amount incurred by Indemnatee, whether for judgments, fines, penalties, excise taxes, amounts paid or to

be paid in settlement and/or for Expenses, in connection with any Proceeding in such proportion as is deemed fair and reasonable in light of all of the circumstances in order to reflect (i) the relative benefits received by the Company and Indemnitee in connection with the event(s) and/or transaction(s) giving rise to such Proceeding; and/or (ii) the relative fault of the Company (and its directors, officers, employees and agents) and Indemnitee in connection with such event(s) and/or transactions.

Section 21. Internal Revenue Code Section 409A. The Company intends for this Agreement to comply with the Indemnification exception under Section 1.409A-1(b)(10) of the regulations promulgated under the Internal Revenue Code of 1986, as amended (the “Code”), which provides that indemnification of, or the purchase of an insurance policy providing for payments of, all or part of the expenses incurred or damages paid or payable by Indemnitee with respect to a bona fide claim against Indemnitee or the Company do not provide for a deferral of compensation, subject to Section 409A of the Code, where such claim is based on actions or failures to act by Indemnitee in his or her capacity as a service provider of the Company. The parties intend that this Agreement be interpreted and construed with such intent.

Section 22. Applicable Law and Consent to Jurisdiction. This Agreement and the legal relations among the parties shall be governed by, and construed and enforced in accordance with, the laws of the State of Delaware, without regard to its conflict of laws rules. Except with respect to any arbitration commenced by Indemnitee pursuant to Section 12(a) of this Agreement, the Company and Indemnitee hereby irrevocably and unconditionally (i) agree that any action or proceeding arising out of or in connection with this Agreement shall be brought only in the Delaware Court, and not in any other state or federal court in the United States of America or any court in any other country, (ii) consent to submit to the exclusive jurisdiction of the Delaware Court for purposes of any action or proceeding arising out of or in connection with this Agreement, (iii) consent to service of process at the address set forth in Section 19 of this Agreement with the same legal force and validity as if served upon such party personally within the State of Delaware, (iv) waive any objection to the laying of venue of any such action or proceeding in the Delaware Court, and (v) waive, and agree not to plead or to make, any claim that any such action or proceeding brought in the Delaware Court has been brought in an improper or inconvenient forum.

Section 23. Headings. The headings of the paragraphs of this Agreement are inserted for convenience only and shall not be deemed to constitute part of this Agreement or to affect the construction thereof.

Section 24. Identical Counterparts. This Agreement may be executed in one or more counterparts, each of which shall for all purposes be deemed to be an original but all of which together shall constitute one and the same Agreement. Only one such counterpart signed by the party against whom enforceability is sought needs to be produced to evidence the existence of this Agreement.

[Remainder of Page Intentionally Left Blank]

IN WITNESS WHEREOF, the parties have caused this Agreement to be signed as of the day and year first above written.

PLUG POWER INC.

By:

Name:

Title:

Name of Indemnitee

**PLUG POWER INC.
OFFICER INDEMNIFICATION AGREEMENT**

This Indemnification Agreement (this "Agreement") is made as of _____ by and between Plug Power Inc., a Delaware corporation (the "Company"), and _____ ("Indemnitee").

RECITALS

WHEREAS, the Company desires to attract and retain the services of highly qualified individuals, such as Indemnitee, to serve the Company;

WHEREAS, in order to induce Indemnitee to provide/continue to provide services to the Company, the Company wishes to provide for the indemnification of, and advancement of expenses to, Indemnitee to the maximum extent permitted by law;

WHEREAS, the Amended and Restated Certificate of Incorporation of the Company (the "Charter") and the Third Amended and Restated By-laws of the Company (the "Bylaws") require indemnification of the officers and directors of the Company, and Indemnitee may also be entitled to indemnification pursuant to the General Corporation Law of the State of Delaware (the "DGCL");

WHEREAS, the Charter, the Bylaws and the DGCL expressly provide that the indemnification provisions set forth therein are not exclusive, and thereby contemplate that contracts may be entered into between the Company and members of the board of directors, officers and other persons with respect to indemnification;

WHEREAS, the Board of Directors of the Company (the "Board") has determined that the increased difficulty in attracting and retaining highly qualified persons such as Indemnitee is detrimental to the best interests of the Company's stockholders;

WHEREAS, it is reasonable and prudent for the Company contractually to obligate itself to indemnify, and to advance expenses on behalf of, such persons to the fullest extent permitted by applicable law, regardless of any amendment or revocation of the Charter or the Bylaws, so that they will serve/continue to serve the Company free from undue concern that they will not be so indemnified; and

WHEREAS, this Agreement is a supplement to and in furtherance of the indemnification provided in the Charter, the Bylaws and any resolutions adopted pursuant thereto, and shall not be deemed a substitute therefor, nor to diminish or abrogate any rights of Indemnitee thereunder.

NOW, THEREFORE, in consideration of the premises and the covenants contained herein, the Company and Indemnitee do hereby covenant and agree as follows:

Section 1. Services to the Company. Indemnitee agrees to serve as [a director and]¹ an officer of the Company. Indemnitee may at any time and for any reason resign from [any]² such position (subject to any other contractual obligation or any obligation imposed by law), in which event the Company shall have no obligation under this Agreement to continue Indemnitee in such position. This Agreement shall not be deemed an employment contract between the Company (or any of its subsidiaries or any Enterprise) and Indemnitee.

Section 2. Definitions.

As used in this Agreement:

(a) “Change in Control” shall be deemed to have occurred in any one of the following events:

(i) any “person,” as such term is used in Sections 13(d) and 14(d) of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), (other than the Company, any of its subsidiaries, any trustee, fiduciary or other person or entity holding securities under any employee benefit plan or trust of the Company or any of its subsidiaries, together with all Affiliates and Associates (as such terms are hereinafter defined) of such person), shall become the “beneficial owner” (as such term is defined in Rule 13d-3 of the Exchange Act), directly or indirectly, of securities of the Company representing 25% or more of the then outstanding shares of common stock of the Company (the “Stock”) (other than as a result of an acquisition of securities directly from the Company); or

(ii) persons who, as of the effective date of this Agreement (the “Effective Date”), constitute the Company’s Board of Directors (the “Incumbent Directors”) cease for any reason, including, without limitation, as a result of a tender offer, proxy contest, merger or similar transaction, to constitute at least a majority of the Board, provided that any person becoming a director of the Company subsequent to the Effective Date shall be considered an Incumbent Director if such person’s election was approved by or such person was nominated for election by either (A) a vote of at least a majority of the Incumbent Directors or (B) a vote of at least a majority of the Incumbent Directors who are members of a nominating committee comprised, in the majority, of Incumbent Directors; but provided further, that any such person whose initial assumption of office is in connection with an actual or threatened election contest relating to the election of members of the Board of Directors or other actual or threatened solicitation of proxies or consents by or on behalf of a Person other than the Board, including by reason of agreement intended to avoid or settle any such actual or threatened contest or solicitation, shall not be considered an Incumbent Director; or

(iii) Upon (A) the consummation of any consolidation or merger of the Company where the shareholders of the Company, immediately prior to the consolidation or merger, did not, immediately after the consolidation or merger, beneficially own (as such term is defined in Rule 13d-3 of the Exchange Act), directly or indirectly, shares

¹ Include for an officer that is also a director of the Company.

² Include for an officer that is also a director of the Company.

representing in the aggregate more than 50% of the voting shares of the corporation issuing cash or securities in the consolidation or merger (or of its ultimate parent corporation, if any), (B) the consummation of any sale, lease, exchange or other transfer (in one transaction or a series of transactions contemplated or arranged by any party as a single plan) of all or substantially all of the assets of the Company or (C) the completion of a liquidation or dissolution that has been approved by the stockholders of the Company.

(iv) For purposes of this Agreement, “Affiliate” and “Associate” shall have the respective meanings ascribed to such terms in Rule 12b-2 of the Exchange Act, as in effect on the date of this Agreement; provided, however, that no person who is a director or officer of the Company shall be deemed an Affiliate or an Associate of any other director or officer of the Company solely as a result of his position as director or officer of the Company.

(b) “Corporate Status” describes the status of a person as a current or former [director or]³ officer of the Company or current or former director, manager, partner, officer, employee, agent or trustee of any other Enterprise which such person is or was serving at the request of the Company.

(c) “Enforcement Expenses” shall include all reasonable attorneys’ fees, court costs, transcript costs, fees of experts, travel expenses, duplicating costs, printing and binding costs, telephone charges, postage, delivery service fees, and all other out-of-pocket disbursements or expenses of the types customarily incurred in connection with an action to enforce indemnification or advancement rights, or an appeal from such action. Expenses, however, shall not include fees, salaries, wages or benefits owed to Indemnitee.

(d) “Enterprise” shall mean any corporation (other than the Company), partnership, joint venture, trust, employee benefit plan, limited liability company, or other legal entity of which Indemnitee is or was serving at the request of the Company as a director, manager, partner, officer, employee, agent or trustee.

(e) “Expenses” shall include all reasonable attorneys’ fees, court costs, transcript costs, fees of experts, travel expenses, duplicating costs, printing and binding costs, telephone charges, postage, delivery service fees, and all other out-of-pocket disbursements or expenses of the types customarily incurred in connection with prosecuting, defending, preparing to prosecute or defend, investigating, being or preparing to be a witness in, or otherwise participating in, a Proceeding or an appeal resulting from a Proceeding. Expenses, however, shall not include amounts paid in settlement by Indemnitee, the amount of judgments or fines against Indemnitee or fees, salaries, wages or benefits owed to Indemnitee.

(f) “Independent Counsel” means a law firm, or a partner (or, if applicable, member or shareholder) of such a law firm, that is experienced in matters of Delaware corporation law and neither presently is, nor in the past five (5) years has been, retained to represent: (i) the Company, any subsidiary of the Company, any Enterprise or Indemnitee in any

³ Include for an officer that is also a director of the Company.

matter material to any such party; or (ii) any other party to the Proceeding giving rise to a claim for indemnification hereunder. Notwithstanding the foregoing, the term “Independent Counsel” shall not include any person who, under the applicable standards of professional conduct then prevailing, would have a conflict of interest in representing either the Company or Indemnitee in an action to determine Indemnitee’s rights under this Agreement. The Company agrees to pay the reasonable fees and expenses of the Independent Counsel referred to above and to fully indemnify such counsel against any and all expenses, claims, liabilities and damages arising out of or relating to this Agreement or its engagement pursuant hereto.

(g) The term “Proceeding” shall include any threatened, pending or completed action, suit, arbitration, alternate dispute resolution mechanism, investigation, inquiry, administrative hearing or any other actual, threatened or completed proceeding, whether brought in the right of the Company or otherwise and whether of a civil, criminal, administrative, regulatory or investigative nature, and whether formal or informal, in which Indemnitee was, is or will be involved as a party or otherwise by reason of the fact that Indemnitee is or was [a director or]⁴ an officer of the Company or is or was serving at the request of the Company as a director, manager, partner, officer, employee, agent or trustee of any Enterprise or by reason of any action taken by Indemnitee or of any action taken on his or her part while acting as [a director or]⁵ an officer of the Company or while serving at the request of the Company as a director, manager, partner, officer, employee, agent or trustee of any Enterprise, in each case whether or not serving in such capacity at the time any liability or expense is incurred for which indemnification, reimbursement or advancement of expenses can be provided under this Agreement; provided, however, that the term “Proceeding” shall not include any action, suit or arbitration, or part thereof, initiated by Indemnitee to enforce Indemnitee’s rights under this Agreement as provided for in Section 12(a) of this Agreement.

Section 3. Indemnity in Third-Party Proceedings. The Company shall indemnify Indemnitee to the extent set forth in this Section 3 if Indemnitee is, or is threatened to be made, a party to or a participant in any Proceeding, other than a Proceeding by or in the right of the Company to procure a judgment in its favor. Pursuant to this Section 3, Indemnitee shall be indemnified against all Expenses, judgments, fines, penalties, excise taxes, and amounts paid in settlement actually and reasonably incurred by Indemnitee or on his or her behalf in connection with such Proceeding or any claim, issue or matter therein, if Indemnitee acted in good faith and in a manner he or she reasonably believed to be in or not opposed to the best interests of the Company and, in the case of a criminal proceeding, had no reasonable cause to believe that his or her conduct was unlawful.

Section 4. Indemnity in Proceedings by or in the Right of the Company. The Company shall indemnify Indemnitee to the extent set forth in this Section 4 if Indemnitee is, or is threatened to be made, a party to or a participant in any Proceeding by or in the right of the Company to procure a judgment in its favor. Pursuant to this Section 4, Indemnitee shall be indemnified against all Expenses actually and reasonably incurred by Indemnitee or on his or her behalf in connection with such Proceeding or any claim, issue or matter therein, if Indemnitee acted in good faith and in a manner he or she reasonably believed to be in or not opposed to the

⁴ Include for an officer that is also a director of the Company.

⁵ Include for an officer that is also a director of the Company.

best interests of the Company. No indemnification for Expenses shall be made under this Section 4 in respect of any claim, issue or matter as to which Indemnitee shall have been finally adjudged by a court to be liable to the Company, unless and only to the extent that the Delaware Court of Chancery (the “Delaware Court”) shall determine upon application that, despite the adjudication of liability but in view of all the circumstances of the case, Indemnitee is fairly and reasonably entitled to indemnification for such expenses as the Delaware Court shall deem proper.

Section 5. Indemnification for Expenses of a Party Who is Wholly or Partly Successful. Notwithstanding any other provisions of this Agreement and except as provided in Section 7, to the extent that Indemnitee is a party to or a participant in any Proceeding and is successful in such Proceeding or in defense of any claim, issue or matter therein, the Company shall indemnify Indemnitee against all Expenses actually and reasonably incurred by him or her in connection therewith. If Indemnitee is not wholly successful in such Proceeding but is successful as to one or more but less than all claims, issues or matters in such Proceeding, the Company shall indemnify Indemnitee against all Expenses actually and reasonably incurred by Indemnitee or on his or her behalf in connection with each successfully resolved claim, issue or matter. For purposes of this Section and without limitation, the termination of any claim, issue or matter in such a Proceeding by dismissal, with or without prejudice, shall be deemed to be a successful result as to such claim, issue or matter.

Section 6. Reimbursement for Expenses of a Witness or in Response to a Subpoena. Notwithstanding any other provision of this Agreement, to the extent that Indemnitee, by reason of his or her Corporate Status, (i) is a witness in any Proceeding to which Indemnitee is not a party and is not threatened to be made a party or (ii) receives a subpoena with respect to any Proceeding to which Indemnitee is not a party and is not threatened to be made a party, the Company shall reimburse Indemnitee for all Expenses actually and reasonably incurred by him or her or on his or her behalf in connection therewith.

Section 7. Exclusions. Notwithstanding any provision in this Agreement to the contrary, the Company shall not be obligated under this Agreement:

(a) to indemnify for amounts otherwise indemnifiable hereunder (or for which advancement is provided hereunder) if and to the extent that Indemnitee has otherwise actually received such amounts under any insurance policy, contract, agreement or otherwise;

(b) to indemnify for an accounting of profits made from the purchase and sale (or sale and purchase) by Indemnitee of securities of the Company within the meaning of Section 16(b) of the Securities Exchange Act of 1934, as amended, or similar provisions of state statutory law or common law, or from the purchase or sale by Indemnitee of such securities in violation of Section 306 of the Sarbanes-Oxley Act of 2002 (“SOX”);

(c) to indemnify for any reimbursement of, or payment to, the Company by Indemnitee of any bonus or other incentive-based or equity-based compensation or of any profits realized by Indemnitee from the sale of securities of the Company pursuant to Section 304 of SOX or any formal policy of the Company adopted by the Board (or a committee thereof), or any

other remuneration paid to Indemnitee if it shall be determined by a final judgment or other final adjudication that such remuneration was in violation of law;

(d) to indemnify with respect to any Proceeding, or part thereof, brought by Indemnitee against the Company, any legal entity which it controls, any director or officer thereof or any third party, unless (i) the Board has consented to the initiation of such Proceeding or part thereof and (ii) the Company provides the indemnification, in its sole discretion, pursuant to the powers vested in the Company under applicable law; provided, however, that this Section 7(d) shall not apply to (A) counterclaims or affirmative defenses asserted by Indemnitee in an action brought against Indemnitee or (B) any action brought by Indemnitee for indemnification or advancement from the Company under this Agreement or under any directors' and officers' liability insurance policies maintained by the Company in the suit for which indemnification or advancement is being sought as described in Section 12; or

(e) to provide any indemnification or advancement of expenses that is prohibited by applicable law (as such law exists at the time payment would otherwise be required pursuant to this Agreement).

Section 8. Advancement of Expenses. Subject to Section 9(b), the Company shall advance, to the extent not prohibited by law, the Expenses incurred by Indemnitee in connection with any Proceeding, and such advancement shall be made within forty-five (45) days after the receipt by the Company of a statement or statements requesting such advances (including any invoices received by Indemnitee, which such invoices may be redacted as necessary to avoid the waiver of any privilege accorded by applicable law) from time to time, whether prior to or after final disposition of any Proceeding. Advances shall be unsecured and interest free. Advances shall be made without regard to Indemnitee's (i) ability to repay the expenses, (ii) ultimate entitlement to indemnification under the other provisions of this Agreement, and (iii) entitlement to and availability of insurance coverage, including advancement, payment or reimbursement of defense costs, expenses or covered loss under the provisions of any applicable insurance policy (including, without limitation, whether such advancement, payment or reimbursement is withheld, conditioned or delayed by the insurer(s)). Indemnitee shall qualify for advances upon the execution and delivery to the Company of this Agreement which shall constitute an undertaking providing that Indemnitee undertakes to the fullest extent required by law to repay the advance if and to the extent that it is ultimately determined by a court of competent jurisdiction in a final judgment, not subject to appeal, that Indemnitee is not entitled to be indemnified by the Company. The right to advances under this paragraph shall in all events continue until final disposition of any Proceeding, including any appeal therein. Nothing in this Section 8 shall limit Indemnitee's right to advancement pursuant to Section 12(e) of this Agreement.

Section 9. Procedure for Notification and Defense of Claim.

(a) To obtain indemnification under this Agreement, Indemnitee shall submit to the Company a written request therefor specifying the basis for the claim, the amounts for which Indemnitee is seeking payment under this Agreement, and all documentation related thereto as reasonably requested by the Company.

(b) In the event that the Company shall be obligated hereunder to provide indemnification for or make any advancement of Expenses with respect to any Proceeding, the Company shall be entitled to assume the defense of such Proceeding, or any claim, issue or matter therein, with counsel approved by Indemnitee (which approval shall not be unreasonably withheld or delayed) upon the delivery to Indemnitee of written notice of the Company's election to do so. After delivery of such notice, approval of such counsel by Indemnitee and the retention of such counsel by the Company, the Company will not be liable to Indemnitee under this Agreement for any fees or expenses of separate counsel subsequently employed by or on behalf of Indemnitee with respect to the same Proceeding; provided that (i) Indemnitee shall have the right to employ separate counsel in any such Proceeding at Indemnitee's expense and (ii) if (A) the employment of separate counsel by Indemnitee has been previously authorized by the Company, (B) Indemnitee shall have reasonably concluded that there may be a conflict of interest between the Company and Indemnitee in the conduct of such defense, or (C) the Company shall not continue to retain such counsel to defend such Proceeding, then the fees and expenses actually and reasonably incurred by Indemnitee with respect to his or her separate counsel shall be Expenses hereunder.

(c) In the event that the Company does not assume the defense in a Proceeding pursuant to paragraph (b) above, then the Company will be entitled to participate in the Proceeding at its own expense.

(d) The Company shall not be liable to indemnify Indemnitee under this Agreement for any amounts paid in settlement of any Proceeding effected without its prior written consent (which consent shall not be unreasonably withheld or delayed). Without limiting the generality of the foregoing, the fact that an insurer under an applicable insurance policy delays or is unwilling to consent to such settlement or is or may be in breach of its obligations under such policy, or the fact that directors' and officers' liability insurance is otherwise unavailable or not maintained by the Company, may not be taken into account by the Company in determining whether to provide its consent. The Company shall not, without the prior written consent of Indemnitee (which consent shall not be unreasonably withheld or delayed), enter into any settlement which (i) includes an admission of fault of Indemnitee, any non-monetary remedy imposed on Indemnitee or any monetary damages for which Indemnitee is not wholly and actually indemnified hereunder or (ii) with respect to any Proceeding with respect to which Indemnitee may be or is made a party or may be otherwise entitled to seek indemnification hereunder, does not include the full release of Indemnitee from all liability in respect of such Proceeding.

Section 10. Procedure Upon Application for Indemnification.

(a) Upon written request by Indemnitee for indemnification pursuant to Section 9(a), a determination, if such determination is required by applicable law, with respect to Indemnitee's entitlement to indemnification hereunder shall be made in the specific case by one of the following methods: [(x) if a Change in Control shall have occurred and indemnification is being requested by Indemnitee hereunder in his or her capacity as a director of the Company, by Independent Counsel in a written opinion to the Board; or (y) in any other case,]⁶ (i) by a

⁶ Include only for an officer who is also a director of the Company.

majority vote of the disinterested directors, even though less than a quorum; (ii) by a committee of disinterested directors designated by a majority vote of the disinterested directors, even though less than a quorum; or (iii) if there are no disinterested directors or if the disinterested directors so direct, by Independent Counsel in a written opinion to the Board. For purposes hereof, disinterested directors are those members of the Board who are not parties to the action, suit or proceeding in respect of which indemnification is sought. In the case that such determination is made by Independent Counsel, a copy of Independent Counsel's written opinion shall be delivered to Indemnitee and, if it is so determined that Indemnitee is entitled to indemnification, payment to Indemnitee shall be made within forty-five (45) days after such determination. Indemnitee shall cooperate with the Independent Counsel or the Company, as applicable, in making such determination with respect to Indemnitee's entitlement to indemnification, including providing to such counsel or the Company, upon reasonable advance request, any documentation or information which is not privileged or otherwise protected from disclosure and which is reasonably available to Indemnitee and reasonably necessary to such determination. Any out-of-pocket costs or expenses (including reasonable attorneys' fees and disbursements) actually and reasonably incurred by Indemnitee in so cooperating with the Independent Counsel or the Company shall be borne by the Company (irrespective of the determination as to Indemnitee's entitlement to indemnification) and the Company hereby indemnifies and agrees to hold Indemnitee harmless therefrom.

(b) If the determination of entitlement to indemnification is to be made by Independent Counsel pursuant to Section 10(a), the Independent Counsel shall be selected by the Board[; provided that, if a Change in Control shall have occurred and indemnification is being requested by Indemnitee hereunder in his or her capacity as a director of the Company, the Independent Counsel shall be selected by Indemnitee]⁷. Indemnitee [or the Company, as the case may be,]⁸ may, within ten (10) days after written notice of such selection, deliver to the Company [or Indemnitee, as the case may be,]⁹ a written objection to such selection; provided, however, that such objection may be asserted only on the ground that the Independent Counsel so selected does not meet the requirements of "Independent Counsel" as defined in Section 2 of this Agreement, and the objection shall set forth with particularity the factual basis of such assertion. Absent a proper and timely objection, the person so selected shall act as Independent Counsel. If such written objection is so made and substantiated, the Independent Counsel so selected may not serve as Independent Counsel unless and until such objection is withdrawn or the Delaware Court has determined that such objection is without merit. If, within twenty (20) days after the later of (i) submission by Indemnitee of a written request for indemnification pursuant to Section 9(a), and (ii) the final disposition of the Proceeding, including any appeal therein, no Independent Counsel shall have been selected without objection, either Indemnitee or the Company may petition the Delaware Court for resolution of any objection which shall have been made by Indemnitee or the Company to the selection of Independent Counsel and/or for the appointment as Independent Counsel of a person selected by the court or by such other person as the court shall designate. The person with respect to whom all objections are so resolved or the person so appointed shall act as Independent Counsel under Section 10(a) hereof. Upon the due commencement of any judicial proceeding or arbitration pursuant to Section 12(a) of this

⁷ Include only for an officer that is also a director of the Company.

⁸ Include only for an officer that is also a director of the Company.

⁹ Include only for an officer that is also a director of the Company.

Agreement, Independent Counsel shall be discharged and relieved of any further responsibility in such capacity (subject to the applicable standards of professional conduct then prevailing).

(c) Notwithstanding anything to the contrary contained in this Agreement, the determination of entitlement to indemnification under this Agreement shall be made without regard to the Indemnitee's entitlement to and availability of insurance coverage, including advancement, payment or reimbursement of defense costs, expenses or covered loss under the provisions of any applicable insurance policy (including, without limitation, whether such advancement, payment or reimbursement is withheld, conditioned or delayed by the insurer(s)).

Section 11. Presumptions and Effect of Certain Proceedings.

(a) To the extent permitted by applicable law, in making a determination with respect to entitlement to indemnification hereunder, it shall be presumed that Indemnitee is entitled to indemnification under this Agreement if Indemnitee has submitted a request for indemnification in accordance with Section 9(a) of this Agreement, and the Company shall have the burden of proof to overcome that presumption in connection with the making of any determination contrary to that presumption.

(b) The termination of any Proceeding or of any claim, issue or matter therein, by judgment, order, settlement or conviction, or upon a plea of guilty, nolo contendere or its equivalent, shall not (except as otherwise expressly provided in this Agreement) of itself adversely affect the right of Indemnitee to indemnification or create a presumption that Indemnitee did not act in good faith and in a manner which he or she reasonably believed to be in or not opposed to the best interests of the Company or, with respect to any criminal Proceeding, that Indemnitee had reasonable cause to believe that his or her conduct was unlawful.

(c) The knowledge and/or actions, or failure to act, of any director, manager, partner, officer, employee, agent or trustee of the Company, any subsidiary of the Company, or any Enterprise shall not be imputed to Indemnitee for purposes of determining the right to indemnification under this Agreement.

Section 12. Remedies of Indemnitee.

(a) Subject to Section 12(f), in the event that (i) a determination is made pursuant to Section 10 of this Agreement that Indemnitee is not entitled to indemnification under this Agreement, (ii) advancement of Expenses is not timely made pursuant to Section 8 of this Agreement, (iii) no determination of entitlement to indemnification shall have been made pursuant to Section 10(a) of this Agreement within sixty (60) days after receipt by the Company of the request for indemnification for which a determination is to be made other than by Independent Counsel, (iv) payment of indemnification or reimbursement of expenses is not made pursuant to Section 5 or 6 or the last sentence of Section 10(a) of this Agreement within forty-five (45) days after receipt by the Company of a written request therefor (including any invoices received by Indemnitee, which such invoices may be redacted as necessary to avoid the waiver of any privilege accorded by applicable law) or (v) payment of indemnification pursuant to Section 3 or 4 of this Agreement is not made within forty-five (45) days after a determination has

been made that Indemnitee is entitled to indemnification, Indemnitee shall be entitled to an adjudication by the Delaware Court of his or her entitlement to such indemnification or advancement. Alternatively, Indemnitee, at his or her option, may seek an award in arbitration to be conducted by a single arbitrator pursuant to the Commercial Arbitration Rules of the American Arbitration Association. Indemnitee shall commence such proceeding seeking an adjudication or an award in arbitration within 180 days following the date on which Indemnitee first has the right to commence such proceeding pursuant to this Section 12(a); provided, however, that the foregoing time limitation shall not apply in respect of a proceeding brought by Indemnitee to enforce his or her rights under Section 5 of this Agreement. The Company shall not oppose Indemnitee's right to seek any such adjudication or award in arbitration.

(b) In the event that a determination shall have been made pursuant to Section 10(a) of this Agreement that Indemnitee is not entitled to indemnification, any judicial proceeding or arbitration commenced pursuant to this Section 12 shall be conducted in all respects as a de novo trial, or arbitration, on the merits and Indemnitee shall not be prejudiced by reason of that adverse determination. In any judicial proceeding or arbitration commenced pursuant to this Section 12, the Company shall have the burden of proving Indemnitee is not entitled to indemnification or advancement, as the case may be.

(c) If a determination shall have been made pursuant to Section 10(a) of this Agreement that Indemnitee is entitled to indemnification, the Company shall be bound by such determination in any judicial proceeding or arbitration commenced pursuant to this Section 12, absent (i) a misstatement by Indemnitee of a material fact, or an omission of a material fact necessary to make Indemnitee's statement not materially misleading, in connection with the request for indemnification, or (ii) a prohibition of such indemnification under applicable law.

(d) The Company shall be precluded from asserting in any judicial proceeding or arbitration commenced pursuant to this Section 12 that the procedures and presumptions of this Agreement are not valid, binding and enforceable and shall stipulate in any such court or before any such arbitrator that the Company is bound by all the provisions of this Agreement.

(e) The Company shall indemnify Indemnitee to the fullest extent permitted by law against any and all Enforcement Expenses and, if requested by Indemnitee, shall (within forty-five (5) days after receipt by the Company of a written request therefor) advance, to the extent not prohibited by law, such Enforcement Expenses to Indemnitee, which are incurred by Indemnitee in connection with any action brought by Indemnitee for indemnification or advancement from the Company under this Agreement or under any directors' and officers' liability insurance policies maintained by the Company in the suit for which indemnification or advancement is being sought. Such written request for advancement shall include invoices received by Indemnitee in connection with such Enforcement Expenses but, in the case of invoices in connection with legal services, any references to legal work performed or to expenditures made that would cause Indemnitee to waive any privilege accorded by applicable law need not be included with the invoice.

(f) Notwithstanding anything in this Agreement to the contrary, no determination as to entitlement to indemnification under this Agreement shall be required to be made prior to the final disposition of the Proceeding, including any appeal therein.

Section 13. Non-exclusivity; Survival of Rights; Insurance; Subrogation.

(a) The rights of indemnification and to receive advancement as provided by this Agreement shall not be deemed exclusive of any other rights to which Indemnitee may at any time be entitled under applicable law, the Charter, the Bylaws, any agreement, a vote of stockholders or a resolution of directors, or otherwise. No amendment, alteration or repeal of this Agreement or of any provision hereof shall limit or restrict any right of Indemnitee under this Agreement in respect of any action taken or omitted by such Indemnitee in his or her Corporate Status prior to such amendment, alteration or repeal. To the extent that a change in Delaware law, whether by statute or judicial decision, permits greater indemnification or advancement than would be afforded currently under the Charter, Bylaws and this Agreement, it is the intent of the parties hereto that Indemnitee shall enjoy by this Agreement the greater benefits so afforded by such change. No right or remedy herein conferred is intended to be exclusive of any other right or remedy, and every other right and remedy shall be cumulative and in addition to every other right and remedy given hereunder or now or hereafter existing at law or in equity or otherwise. The assertion or employment of any right or remedy hereunder, or otherwise, shall not prevent the concurrent assertion or employment of any other right or remedy.

(b) To the extent that the Company maintains an insurance policy or policies providing liability insurance for directors, managers, partners, officers, employees, agents or trustees of the Company or of any other Enterprise, Indemnitee shall be covered by such policy or policies in accordance with its or their terms to the maximum extent of the coverage available for any such director, manager, partner, officer, employee, agent or trustee under such policy or policies. If, at the time of the receipt of a notice of a claim pursuant to the terms hereof, the Company has director and officer liability insurance in effect, the Company shall give prompt notice of the commencement of such proceeding to the insurers in accordance with the procedures set forth in the respective policies.

(c) In the event of any payment under this Agreement, the Company shall be subrogated to the extent of such payment to all of the rights of recovery of Indemnitee, who shall execute all papers required and take all action necessary to secure such rights, including execution of such documents as are necessary to enable the Company to bring suit to enforce such rights.

(d) The Company's obligation to provide indemnification or advancement hereunder to Indemnitee who is or was serving at the request of the Company as a director, manager, partner, officer, employee, agent or trustee of any other Enterprise shall be reduced by any amount Indemnitee has actually received as indemnification or advancement from such other Enterprise.

Section 14. Duration of Agreement. This Agreement shall continue until and terminate upon the later of: (a) ten (10) years after the date that Indemnitee shall have ceased to serve as [both a director and]¹⁰ an officer of the Company or (b) one (1) year after the final termination of any Proceeding, including any appeal, then pending in respect of which

¹⁰ Include for an officer that is also a director of the Company.

Indemnitee is granted rights of indemnification or advancement hereunder and of any proceeding commenced by Indemnitee pursuant to Section 12 of this Agreement relating thereto. This Agreement shall be binding upon the Company and its successors and assigns and shall inure to the benefit of Indemnitee and his or her heirs, executors and administrators. The Company shall require and cause any successor (whether direct or indirect by purchase, merger, consolidation or otherwise) to all, substantially all or a substantial part, of the business and/or assets of the Company, by written agreement in form and substance satisfactory to Indemnitee, expressly to assume and agree to perform this Agreement in the same manner and to the same extent that the Company would be required to perform if no such succession had taken place.

Section 15. Severability. If any provision or provisions of this Agreement shall be held to be invalid, illegal or unenforceable for any reason whatsoever: (a) the validity, legality and enforceability of the remaining provisions of this Agreement (including, without limitation, each portion of any section of this Agreement containing any such provision held to be invalid, illegal or unenforceable, that is not itself invalid, illegal or unenforceable) shall not in any way be affected or impaired thereby and shall remain enforceable to the fullest extent permitted by law; (b) such provision or provisions shall be deemed reformed to the extent necessary to conform to applicable law and to give the maximum effect to the intent of the parties hereto; and (c) to the fullest extent possible, the provisions of this Agreement (including, without limitation, each portion of any section of this Agreement containing any such provision held to be invalid, illegal or unenforceable, that is not itself invalid, illegal or unenforceable) shall be construed so as to give effect to the intent manifested thereby.

Section 16. Enforcement.

(a) The Company expressly confirms and agrees that it has entered into this Agreement and assumed the obligations imposed on it hereby in order to induce Indemnitee to serve/continue to serve as [a director and]¹¹ an officer of the Company, and the Company acknowledges that Indemnitee is relying upon this Agreement in serving as [a director and]¹² an officer of the Company.

(b) This Agreement constitutes the entire agreement between the parties hereto with respect to the subject matter hereof and supersedes all prior agreements and understandings, oral, written and implied, between the parties hereto with respect to the subject matter hereof; provided, however, that this Agreement is a supplement to and in furtherance of the Charter, the Bylaws and applicable law, and shall not be deemed a substitute therefor, nor to diminish or abrogate any rights of Indemnitee thereunder.

Section 17. Modification and Waiver. No supplement, modification or amendment, or waiver of any provision, of this Agreement shall be binding unless executed in writing by the parties thereto. No waiver of any of the provisions of this Agreement shall be deemed or shall constitute a waiver of any other provisions of this Agreement nor shall any waiver constitute a continuing waiver. No supplement, modification or amendment of this Agreement or of any provision hereof shall limit or restrict any right of Indemnitee under this Agreement in respect of

¹¹ Include for an officer that is also a director of the Company.

¹² Include for an officer that is also a director of the Company.

any action taken or omitted by such Indemnitee prior to such supplement, modification or amendment.

Section 18. Notice by Indemnitee. Indemnitee agrees promptly to notify the Company in writing upon being served with any summons, citation, subpoena, complaint, indictment, information or other document relating to any Proceeding or matter which may be subject to indemnification, reimbursement or advancement as provided hereunder. The failure of Indemnitee to so notify the Company shall not relieve the Company of any obligation which it may have to Indemnitee under this Agreement or otherwise.

Section 19. Notices. All notices, requests, demands and other communications under this Agreement shall be in writing and shall be deemed to have been duly given if (i) delivered by hand and receipted for by the party to whom said notice or other communication shall have been directed, (ii) mailed by certified or registered mail with postage prepaid, on the third business day after the date on which it is so mailed, (iii) mailed by reputable overnight courier and receipted for by the party to whom said notice or other communication shall have been directed or (iv) sent by facsimile transmission, with receipt of oral confirmation that such transmission has been received:

- (a) If to Indemnitee, at such address as Indemnitee shall provide to the Company.
- (b) If to the Company to:

Plug Power Inc.
968 Albany Shaker Road
Latham, New York 12110
(518) 782-7700
Attention: Gerard L. Conway Jr., Esq., General Counsel

or to any other address as may have been furnished to Indemnitee by the Company.

Section 20. Contribution. To the fullest extent permissible under applicable law, if the indemnification provided for in this Agreement is unavailable to Indemnitee for any reason whatsoever, the Company, in lieu of indemnifying Indemnitee, shall contribute to the amount incurred by Indemnitee, whether for judgments, fines, penalties, excise taxes, amounts paid or to be paid in settlement and/or for Expenses, in connection with any Proceeding in such proportion as is deemed fair and reasonable in light of all of the circumstances in order to reflect (i) the relative benefits received by the Company and Indemnitee in connection with the event(s) and/or transaction(s) giving rise to such Proceeding; and/or (ii) the relative fault of the Company (and its directors, officers, employees and agents) and Indemnitee in connection with such event(s) and/or transactions.

Section 21. Internal Revenue Code Section 409A. The Company intends for this Agreement to comply with the Indemnification exception under Section 1.409A-1(b)(10) of the regulations promulgated under the Internal Revenue Code of 1986, as amended (the "Code"), which provides that indemnification of, or the purchase of an insurance policy providing for

payments of, all or part of the expenses incurred or damages paid or payable by Indemnitee with respect to a bona fide claim against Indemnitee or the Company do not provide for a deferral of compensation, subject to Section 409A of the Code, where such claim is based on actions or failures to act by Indemnitee in his or her capacity as a service provider of the Company. The parties intend that this Agreement be interpreted and construed with such intent.

Section 22. Applicable Law and Consent to Jurisdiction. This Agreement and the legal relations among the parties shall be governed by, and construed and enforced in accordance with, the laws of the State of Delaware, without regard to its conflict of laws rules. Except with respect to any arbitration commenced by Indemnitee pursuant to Section 12(a) of this Agreement, the Company and Indemnitee hereby irrevocably and unconditionally (i) agree that any action or proceeding arising out of or in connection with this Agreement shall be brought only in the Delaware Court, and not in any other state or federal court in the United States of America or any court in any other country, (ii) consent to submit to the exclusive jurisdiction of the Delaware Court for purposes of any action or proceeding arising out of or in connection with this Agreement, (iii) consent to service of process at the address set forth in Section 19 of this Agreement with the same legal force and validity as if served upon such party personally within the State of Delaware, (iv) waive any objection to the laying of venue of any such action or proceeding in the Delaware Court, and (v) waive, and agree not to plead or to make, any claim that any such action or proceeding brought in the Delaware Court has been brought in an improper or inconvenient forum.

Section 23. Headings. The headings of the paragraphs of this Agreement are inserted for convenience only and shall not be deemed to constitute part of this Agreement or to affect the construction thereof.

Section 24. Identical Counterparts. This Agreement may be executed in one or more counterparts, each of which shall for all purposes be deemed to be an original but all of which together shall constitute one and the same Agreement. Only one such counterpart signed by the party against whom enforceability is sought needs to be produced to evidence the existence of this Agreement.

[Remainder of Page Intentionally Left Blank]

IN WITNESS WHEREOF, the parties have caused this Agreement to be signed as of the day and year first above written.

PLUG POWER INC.

By: _____
Name: _____
Title: _____

Name of Indemnitee

Consent of Independent Registered Public Accounting Firm

The Board of Directors
Plug Power Inc.:

We consent to the incorporation by reference in the registration statements (Nos. 333-235328 and 333-189056) on Form S-3 and (Nos. 333-234784, 333-222260, 333-200912, 333-175907, 333-90277, 333-90275, and 333-72734) on Form S-8 of Plug Power Inc. of our report dated March 9, 2020, with respect to the consolidated balance sheets of Plug Power Inc. and subsidiaries as of December 31, 2019 and 2018, the related consolidated statements of operations, comprehensive loss, stockholders' equity, and cash flows for each of the years in the three-year period ended December 31, 2019, and the related notes (collectively, the consolidated financial statements), and the effectiveness of internal control over financial reporting as of December 31, 2019, which report appears in the December 31, 2019 annual report on Form 10-K of Plug Power Inc.

Our report refers to the Company's adoption of the new lease standard.

/s/ KPMG LLP

Albany, New York
March 9, 2020

**CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the Annual Report of Plug Power Inc. (the "Company") on Form 10-K for the period ended December 31, 2019 as filed with the Securities and Exchange Commission (the "SEC") on the date hereof (the "Report"), I, Andrew Marsh, Chief Executive Officer of the Company, certify, solely pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002 ("§ 906"), that to my knowledge:

- (1) The Report fully complies with the requirements of Section 13(a) or 15(d), as applicable, of the Securities Exchange Act of 1934, as amended; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

This certification is being furnished and not filed, and shall not be incorporated into any documents for any other purpose, under the Securities Exchange Act of 1934, as amended, or the Securities Act of 1933, as amended. A signed original of this written statement required by § 906 has been provided to the Company and will be retained by the Company and furnished to the SEC or its staff upon request.

/s/ Andrew Marsh

Andrew Marsh
Chief Executive Officer
March 9, 2020

**CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the Annual Report of Plug Power Inc. (the "Company") on Form 10-K for the period ended December 31, 2019 as filed with the Securities and Exchange Commission (the "SEC") on the date hereof (the "Report"), I, Paul B. Middleton, Chief Financial Officer of the Company, certify, solely pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002 ("§ 906"), that to my knowledge:

- (1) The Report fully complies with the requirements of Section 13(a) or 15(d), as applicable, of the Securities Exchange Act of 1934, as amended; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

This certification is being furnished and not filed, and shall not be incorporated into any documents for any other purpose, under the Securities Exchange Act of 1934, as amended, or the Securities Act of 1933, as amended. A signed original of this written statement required by § 906 has been provided to the Company and will be retained by the Company and furnished to the SEC or its staff upon request.

/s/ Paul B. Middleton

Paul B. Middleton
Chief Financial Officer
March 9, 2020
