

PLUG POWER INC
Form 10-K
March 13, 2019
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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, 2018

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	22-3672377
(State or Other Jurisdiction	(I.R.S. Identification
of Incorporation or Organization)	Number)

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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(b) of the Act:

Title of Each Class	Name of Each Exchange on Which Registered
Common Stock, par value \$.01 per share Series A Junior Participating Cumulative	The NASDAQ Capital Market
Preferred Stock, par value \$.01 per share	The NASDAQ Capital Market

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 if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§229.405 of this chapter) is not contained herein, and will not be contained, to the best of the registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, 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
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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 common stock held by non-affiliates of the registrant was approximately \$457,430,028 based on the last reported sale of the common stock on The Nasdaq Capital Market on June 30, 2018, the last business day of the registrant's most recently completed second fiscal quarter.

As of March 12, 2019, 233,835,808 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 2019 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, 2018.

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PART I

Forward Looking Statements

The following discussion should be read in conjunction with our accompanying 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 and Section 21E of 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,” “project” of such words or other similar words or phrases. We believe that it is important to communicate our future expectations to our investors. However, 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 because they involve risks and uncertainties, and 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 anticipate continuing to incur losses; the risk that we will need to raise additional capital to fund our operations and such capital may not be available to us; our ability to obtain financing arrangements to support the sale or leasing of our products and services to customers; risk of our convertible debt securities that may be settled in cash, such as our Convertible Senior Notes, will have a material effect on our reported financial results; that our convertible note hedges may affect the value of the Convertible Senior Notes and our common stock; the volatility of the market price of our common stock; 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 their receivables, a material adverse effect could result on our financial condition; the cost and availability of fuel and fueling infrastructures for our products; the risk of delays in or not completing our product development goals; the risk of elimination of government subsidies and economic incentives for alternative energy products; the risk of potential losses related to any product liability claims or contract disputes; competitive factors, such as price competition and competition from other traditional and alternative energy companies; the cost and availability of components and parts for our products; possible new tariffs could have a material adverse effect on our business 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 risk that unit orders may not ship, be installed and/or converted to revenue, in whole or in part; the risk of dependency on information technology in our operations and the failure of such technology; the risks related to the use of flammable fuels in our products; our subjectivity to legal proceedings and legal compliance risks; our ability to protect our intellectual property; 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 of loss related to an inability to maintain an effective system of internal controls; our ability to attract and maintain key personnel; the risks associated with potential future acquisitions; the cost of complying with current and future federal, state and international governmental regulations; our 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 and other risks and uncertainties discussed under Item 1A. Risk Factors. Readers should not place undue reliance on our forward looking statements. These forward looking statements speak only as of the date on which the statements were made and are not guarantees of future performance. 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.

Item 1. Business

Background

Plug Power Inc., or the Company, is a leading provider of alternative energy technology focused on the design, development, commercialization and manufacture of hydrogen and fuel cell systems used primarily for the material handling and stationary power markets. As part of the global drive to electrification, the Company has recently entered new electric vehicle markets, specifically ground support equipment and electric delivery vans. These applications promote the advancement of hydrogen fueling and accelerate commercialization of hydrogen-fueled products.

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

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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.

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 distribution and manufacturing businesses. We are focusing our efforts on industrial mobility applications (electric forklifts and electric industrial vehicles) at multi shift high volume manufacturing and high throughput distribution sites where 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 prove 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

We are committed to developing effective, economical and reliable fuel cell related products, systems and services for businesses and government agencies. Building on our substantial fuel cell application and product integration experience, we are focused on generating strong relationships with customers who value increased reliability, productivity and energy security.

Our business strategy leverages our unique fuel cell application and integration knowledge to identify early adopter markets for which we can design and develop innovative systems and customer solutions that provide superior value, ease of use and environmental design.

Our primary marketing strategy is to focus our resources on the material handling market. Through established customer relationships, Plug Power has proven itself as a trusted partner with a reliable fuel cell solution. We have made significant progress in penetrating the material handling market, supported through the deployment of over 25,000 GenDrive units into commercial applications. We believe we have developed reliable products which allow the end customers to eliminate incumbent power sources from their operations and realize their sustainability objectives

through 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, improve service and post sales support experience.

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, Plug Power is evaluating adjacent markets such as ProGen electric vehicles, ground support equipment (GSE) 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.

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Products and Services

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 distribution and manufacturing businesses. We are focusing our efforts on industrial mobility applications (electric forklifts and electric industrial vehicles) at multi shift high volume manufacturing and high throughput distribution sites where 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 prove 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 cells, GenSure products, GenFuel products and ProGen 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 turn-key solution combining either GenDrive or GenSure power with GenFuel fuel and GenCare aftermarket service, offering complete simplicity to customers transitioning to fuel cell power;

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; and

GenFund: GenFund is a collaboration with leasing organizations to provide cost efficient and seamless financing solutions to customers.

We provide our products worldwide through our direct product sales force, and by leveraging relationships with original equipment manufacturers, or OEMs, and their dealer networks.

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. A high percentage of fuel cells sold in recent years were bundled with

maintenance contracts. As a result, only approximately 1.0% of fuel cells deployed are still under standard warranty that is not a part of an extended maintenance contract.

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, 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 \$225.0 million and \$285.0 million for the years ended December 31, 2018 and 2017, respectively. The Company's backlog for products and services approximated \$540.0 million and \$500.0 million as of December 31, 2018 and 2017, 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

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over a longer period of time. 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, 2018, 66.7% of total consolidated revenues were associated primarily with Amazon.com, Inc (Amazon) and Wal-Mart Stores, Inc (Walmart), representing 22.1% and 44.6%, respectively. A loss or decline in business with any of the aforementioned parties, 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. Currently, the supply and manufacture of varied critical components used in our products and services are performed by sole sourced third party vendors in the U.S., Canada and China.

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.

Competition

We are confronted by 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. The principal competitive factors in the markets in which we operate include product features, including size and weight, relative price and performance, product quality and reliability, 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 125 issued patents currently active with the USPTO. At the close of 2018, we had four U.S. patent applications pending. Additionally, we have 19 trademarks registered with the USPTO and three trademark applications pending.

Government Regulation

Our products and their installations are subject to oversight and regulation at the state and local level in accordance with state and local 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.

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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 standards in 2018. 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 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.

Research and Development

Because the fuel cell industry is characterized by its 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 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 \$33.9 million, \$28.7 million, and \$21.2 million during the years ended December 31, 2018, 2017 and 2016, respectively. We also had cost of research and development contract revenue of zero, \$0.3 million, \$0.9 million during the years ended December 31, 2018, 2017 and 2016, 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, 2018, we had 685 employees, including 110 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 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

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of charge, other than an investor's own internet access charges, on the Company's website with an internet address of 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 (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. Except as mentioned under "Quantitative and Qualitative Disclosure About Market Risk" and except for the historical information contained herein, 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."

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 \$78.1 million in 2018, \$127.1 million in 2017 and \$57.5 million in 2016. As of December 31, 2018, 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 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.

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. The profitability of our products depends largely on material and manufacturing costs and the market price of hydrogen. We cannot guarantee that we will be able to lower these costs to the levels to assure market acceptance in conjunction with other critical customer criteria in performance and reliability.

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

On December 31, 2018, we had cash and cash equivalents of \$38.6 million, restricted cash of \$71.6 million and net working capital of \$9.2 million. This compares to \$24.8 million, \$43.2 million and \$3.9 million, respectively, on December 31, 2017. Restricted cash becomes available to us as we perform in accordance with the related leasing agreements.

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 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

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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 raise additional funds through the issuance of equity or convertible debt securities, the percentage ownership of our existing stockholders could be significantly diluted, and these newly issued securities may have rights, preferences or privileges senior to those of existing stockholders. 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.

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

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. For example, approximately \$71.6 million of our cash is currently restricted to support such leasing arrangements, which prevents us from using such cash for other purposes. 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.

Convertible debt securities that may be settled in cash, such as the Convertible Senior Notes, will 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 Convertible Senior Notes) 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 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. We will report larger net losses (or lower net income) in our financial results because ASC 470-20 will require 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.

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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 Convertible Senior Notes, we entered into convertible note hedge transactions with one or more of the initial purchasers of the 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 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 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 Convertible Senior Notes (and are likely to do so during any observation period related to a conversion of Convertible Senior Notes or following any repurchase of 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.

Our stock price and stock trading volume have been and could remain volatile.

The market price of our common stock has historically experienced and may continue to experience significant volatility. In 2018, the sales price of our common stock fluctuated from a high of \$2.16 per share to a low of \$1.02 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.

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Sales of a substantial number of shares of our common stock in the public market could occur at any time. These sales, or the market perception that the holders of a large number of shares intend to sell shares, could reduce the market price of our common stock.

Additionally, market conditions may result in volatility in the level of, and fluctuations in, the market prices of stocks generally and, in turn, our common stock and sales of substantial amounts of our common stock in the market, in each case being unrelated or disproportionate to changes in our operating performance.

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, 2018, 66.7% of total consolidated revenues were associated primarily with Amazon and Walmart, representing 22.1% and 44.6%, respectively. For the year ended December 31, 2017, 71.8% of total consolidated revenues were associated primarily with Amazon and Walmart, representing 42.4% and 29.4%, respectively. For the year ended 2016, 34.1% of total consolidated revenues were associated primarily with Walmart. 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. 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.

Our product sales and performance depends on the availability of hydrogen.

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.

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.

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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 are conducting 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.

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.

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 and is scheduled to expire December 31, 2022. The renewal allows for a 30% investment tax credit which begins to phase out from 2020 to 2022. 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.

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 that will 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 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 design defects could result in unexpected material liabilities and could adversely affect our business, financial condition, results of operation, cash flows and prospects. In addition, a well publicized 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.

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.

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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, the Company commenced a field replacement program for certain composite fuel tanks that did not meet the supply contract standard, as determined by the Company and the manufacturer. The manufacturer of the tanks is funding the entire incremental cost of the replacement program and the Company is working with its 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 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. Technological advances in alternative energy products, battery systems or other fuel cell technologies may make our products less attractive or render them obsolete.

A material change in cost, performance, availability, or development of key suppliers' products could have a material adverse effect on our business.

We have certain key suppliers who we rely on for critical components in our products, and there are numerous other components for our products that are sole sourced. A supplier's failure to develop and supply components in a timely manner or at all, or to develop or supply components that meet our quality, quantity or cost requirements, or our inability to obtain substitute sources of these components on a timely basis or on terms acceptable to us, could harm our ability to manufacture our products. 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.

In addition, 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.

Possible new 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. The United States has recently imposed tariffs on steel and aluminum imports which may increase the cost of raw materials for our products and decrease the available supply. The United States is also considering tariffs on additional items which could include items imported by us from China or other countries.

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 recently 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.

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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 may also 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.

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 \$225.0 million and \$285 million for the years ended December 31, 2018 and 2017 respectively. The Company's backlog for products and services approximated \$540.0 million and \$500.0 million as of December 31, 2018 and 2017, 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 issuing a purchase order to 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.

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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 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.

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 if there is an unfavorable outcome. 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.

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

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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 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 fluctuations in currency exchange rates. Also, to the extent our operations and assets are located in foreign countries, they are potentially subject to nationalization actions over which we will have no control.

For example, we operate in France under the name HyPulsion to develop and sell hydrogen fuel cell systems for the European material handling market. However, for the reasons discussed above, HyPulsion may not be able to accomplish its goals or become profitable.

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, fluctuations in currency exchange rates, longer accounts receivable requirements and collections, difficulties in managing international operations, potentially adverse tax consequences, 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 differing legal, regulatory, economic, social and political environments.

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 currently 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.

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

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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.

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; 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 anticipate.

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. 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.

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 make it harder for a third party to acquire us without the consent of our board of directors. These provisions include those that: authorize the issuance of up to 5,000,000 shares of preferred stock in one or more series without a stockholder vote; limit stockholders’ ability to call special meetings; establish 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; and provide for staggered terms for our directors. We have a shareholders rights plan that may be triggered if a person or group of affiliated or associated persons acquires beneficial ownership of 15% or more of the outstanding shares of our common stock. In addition, in certain circumstances, Delaware law also imposes restrictions on mergers and other business combinations between us and any holder of 15% or more of our outstanding common stock.

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 year ended December 31, 2018.

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 research and development center. In addition, we lease 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.

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Item 3. Legal Proceedings

On August 28, 2018, a lawsuit was filed on behalf of eight 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 the co-defendants for defect in construction and/or composition, design defect, inadequate warning, breach of express warranty and negligence. The lawsuit claims an unspecified amount of damages for wrongful death and personal injuries, among other damages. The Company intends to vigorously defend the litigation. Given the early stage of this matter, the Company is unable to determine the likelihood of an adverse outcome. However, the Company does not expect the lawsuit 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.

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PART II

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

Market Information. Our common stock is traded on the NASDAQ Capital Market under the symbol "PLUG." As of March 8, 2019, there were approximately 701 record holders of our common stock. However, management believes that a significant number of shares are held by brokers under a "nominee name" and that the number of beneficial shareholders of our common stock exceeds 92,193.

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, 2013 and ending December 31, 2018. 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, 2013 and the reinvestment of all dividends, if any.

Index	2013	2014	2015	2016	2017	2018
Plug Power Inc.	\$ 100.00	\$ 193.55	\$ 136.13	\$ 77.42	\$ 152.26	\$ 80.00
NASDAQ Clean Edge Green Energy Index	\$ 100.00	\$ 96.36	\$ 89.32	\$ 86.09	\$ 112.59	\$ 97.76
Russell 2000 Index	\$ 100.00	\$ 103.53	\$ 97.62	\$ 116.63	\$ 131.96	\$ 115.89

See also Part III Item 12 in this Annual Report on Form 10 K for additional detail related to security ownership and related stockholder matters, and for additional detail on equity compensation plan matters.

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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 2018, 2017, 2016, 2015, and 2014, 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,				
	2018	2017	2016	2015	2014
	(in thousands, except share and per share data)				
Statements Of					
Operations:					
Net revenue (1):					
Sales of fuel cell systems and related infrastructure	\$ 107,292	\$ 62,631	\$ 39,985	\$ 78,002	\$ 48,306
Services performed on fuel cell systems and related infrastructure (2)	22,002	16,202	17,347	13,204	9,909
Power Purchase Agreements	22,869	12,869	13,687	5,718	2,137
Fuel delivered to customers	22,469	8,167	10,916	5,075	1,959
Other	—	284	884	481	1,919
Net revenue	\$ 174,632	\$ 100,153	\$ 82,819	\$ 102,480	\$ 64,230
Cost of revenue:					
Sales of fuel cell systems and related infrastructure	\$ 84,439	\$ 54,815	\$ 29,543	\$ 67,703	\$ 43,378
Services performed on fuel cell systems and related infrastructure (2)	23,698	19,814	19,071	21,717	19,256
Provision for loss contracts related to service	—	—	(1,071)	10,050	—
Power Purchase Agreements (2)	36,161	31,292	16,601	5,665	1,052
Fuel delivered to customers	27,712	22,013	13,864	6,695	2,204

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Other	—	308	865	540	3,202
Total cost of revenue	\$ 172,010	\$ 128,242	\$ 78,873	\$ 112,370	\$ 69,092
Gross profit (loss)	\$ 2,622	\$ (28,089)	\$ 3,946	\$ (9,890)	\$ (4,862)
Research and development expense	33,907	28,693	21,177	14,948	6,469
Selling, general and administrative expenses	38,198	45,010	34,288	34,164	26,601
Other (expense) income, net	(17,849)	(25,288)	(6,360)	3,312	(50,881)
Loss before income taxes	\$ (87,332)	\$ (127,080)	\$ (57,879)	\$ (55,690)	\$ (88,813)
Income tax benefit	9,217	—	392	—	325
Net loss attributable to the Company	\$ (78,115)	\$ (127,080)	\$ (57,487)	\$ (55,690)	\$ (88,488)
Preferred stock dividends declared and accretion of discount	(52)	(3,098)	(104)	(105)	(156)
Net loss attributable to common shareholders	\$ (78,167)	\$ (130,178)	\$ (57,591)	\$ (55,795)	\$ (88,644)
Loss per share, basic and diluted	\$ (0.36)	\$ (0.60)	\$ (0.32)	\$ (0.32)	\$ (0.56)
Weighted average number of common shares outstanding	218,882,337	216,343,985	180,619,860	176,067,231	159,228,815
Balance Sheet Data: (at end of the period)					
Unrestricted cash and cash equivalents	\$ 38,602	\$ 24,828	\$ 46,014	\$ 63,961	\$ 146,205
Total assets (3)	390,326	270,810	240,832	209,456	204,151
Noncurrent liabilities (3)	209,600	80,734	79,637	40,861	19,008
Stockholders' equity	2,713	73,646	85,088	124,736	158,283
Working capital	9,245	3,886	44,448	88,524	167,039

Revenue amounts reported in prior periods have been reclassified to be presented net of provision for common stock warrants, as referenced in Note 2, Summary of Significant Accounting Policies to the Consolidated Financial Statements.

- (2) Presentation of certain service arrangements and the amortization of the associated finance obligations has been corrected in the 2017, 2016 and 2015 selected financial data. See Note 2, Summary of Significant Accounting Policies to the Consolidated Financial Statements.
- (3) 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.

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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, 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

Plug Power Inc., or the Company, is a leading provider of alternative energy technology focused on the design, development, commercialization and manufacture of hydrogen and fuel cell systems used primarily for the material handling and stationary power markets. As part of the global drive to electrification, the Company has recently entered new electric vehicle markets, specifically ground support equipment and electric delivery vans. These applications promote the advancement of hydrogen fueling and accelerate commercialization of hydrogen-fueled products.

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 (LPG), propane, methanol, ethanol, gasoline or biofuels. The Company 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.

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 (electric forklifts and electric industrial vehicles) at multi-shift high volume manufacturing and high

throughput distribution sites where 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 prove 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 cells, GenSure products, GenFuel products and ProGen 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 turn-key solution combining either GenDrive or GenSure 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;

GenFund: GenFund is a collaboration with leasing organizations to provide cost efficient and seamless financing solutions to customers.

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

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 (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.

In the third quarter of 2018, it was determined that the presentation in our consolidated statements of operations of certain service arrangements and the amortization of the associated finance obligations had not been appropriately accounted for resulting in an overstatement of our revenue and cost of revenue. This previous presentation resulted in a gross up of these line items and had no impact on our gross profit (loss) or net loss. The Company corrected the 2017 and 2016 annual financial statements to be consistent with the current period presentation and will correct comparable financial information in future filings. The amount reclassified from revenue on service performed on fuel cell systems and related infrastructure to cost of revenue on PPAs for years ended December 31, 2017 and 2016 was \$3.8 million and \$3.6 million, respectively. The amount reclassified from cost of revenue on service performed on fuel cell systems and related infrastructure to cost of revenue on PPAs for the years ended December 31, 2017 and 2016 was \$3.1 million and \$3.1 million, respectively. The Company does not consider the impact of the prior period correction to be material to the prior period consolidated financial statements. The Company also removed related fuels cell units and infrastructure sites from its services metrics, for purposes of discussing its 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. Beginning in September 2018, the provision for common stock warrants is allocated to our individual revenue line items based on estimated contractual cash flows by revenue stream. Prior period amounts have been reclassified to be consistent with current period presentation. The amount of provision for common stock warrants recorded as a reduction of revenue during the year ended December 31, 2018, 2017 and 2016, respectively is shown in the table below (in thousands):

Year ended December 31,

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	2018	2017	2016
Sales of fuel cell systems and related infrastructure	\$ 4,877	\$ 8,657	\$ —
Services performed on fuel cell systems and related infrastructure	1,951	3,463	—
Power Purchase Agreements	262	7,412	—
Fuel delivered to customers	3,100	10,135	—
Total	\$ 10,190	\$ 29,667	\$ —

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Revenue, cost of revenue, gross profit/(loss) and gross margin for the years ended December 31, 2018, 2017, and 2016, was as follows (in thousands):

	Net	Cost of	Gross	Gross	
	Revenue	Revenue	Profit/(Loss)	Margin	
For the year ended December 31, 2018:					
Sales of fuel cell systems and related infrastructure	\$ 107,292	\$ 84,439	\$ 22,853	21.3	%
Services performed on fuel cell systems and related infrastructure	22,002	23,698	(1,696)	(7.7)	%
Power Purchase Agreements	22,869	36,161	(13,292)	(58.1)	%
Fuel delivered to customers	22,469	27,712	(5,243)	(23.3)	%
Other	—	—	—	—	%
Total	\$ 174,632	\$ 172,010	\$ 2,622	1.5	%
For the year ended December 31, 2017:					
Sales of fuel cell systems and related infrastructure	\$ 62,631	\$ 54,815	\$ 7,816	12.5	%
Services performed on fuel cell systems and related infrastructure	16,202	19,814	(3,612)	(22.3)	%
Power Purchase Agreements	12,869	31,292	(18,423)	(143.2)	%
Fuel delivered to customers	8,167	22,013	(13,846)	(169.5)	%
Other	284	308	(24)	(8.5)	%
Total	\$ 100,153	\$ 128,242	\$ (28,089)	(28.0)	%
For the year ended December 31, 2016:					
Sales of fuel cell systems and related infrastructure	\$ 39,985	\$ 29,543	\$ 10,442	26.1	%
Services performed on fuel cell systems and related infrastructure	17,347				