

**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, 2022

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

For the transition period from to

Commission file number: 1-34392

Plug Power Inc.

(Exact Name of Registrant as Specified in Its Charter)

Delaware
(State or Other Jurisdiction
of Incorporation or Organization)

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

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

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

968 ALBANY SHAKER ROAD, LATHAM, NEW YORK 12110

(Address of Principal Executive Offices, including Zip Code)

(518) 782-7700

(Registrant's telephone number, including area code)

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

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

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

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

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

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

Large accelerated filer <input checked="" type="checkbox"/>	Accelerated Filer <input type="checkbox"/>	Non-accelerated filer <input type="checkbox"/>	Smaller reporting company <input type="checkbox"/>	Emerging growth company <input type="checkbox"/>
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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 has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. Yes ☒ No ☐

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements. ☐

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant's executive officers during the relevant recovery period pursuant to §240.10D-1(b). ☐

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

The aggregate market value of the registrant's voting and non-voting common stock held by non-affiliates of the registrant was approximately \$6,828,840,612 based on the last reported sale of the common stock on The NASDAQ Capital Market on June 30, 2022, the last business day of the registrant's most recently completed second fiscal quarter.

As of February 23, 2023, 593,394,430 shares of the registrant's common stock were issued and outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's definitive proxy statement to be filed with the Securities and Exchange Commission relative to the registrant's 2023 Annual Meeting of Stockholders are incorporated by reference into Items 10, 11, 12, 13 and 14 of Part III of this annual report on Form 10-K.

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General

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

PART I

Forward-Looking Statements

The following discussion should be read in conjunction with our consolidated financial statements and notes thereto included within this Annual Report on Form 10-K. In addition to historical information, this Annual Report on Form 10-K and the following discussion contain statements that are not historical facts and are considered forward-looking within the meaning of Section 27A of the Securities Act of 1933, as amended (the “Securities Act”), and Section 21E of the Securities Exchange Act of 1934, as amended (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,” “potential,” “project,” or the negative 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 might never achieve or maintain profitability;
- the risk that we will need to raise additional capital to fund our operations and such capital may not be available to us;
- the risks associated with global economic uncertainty, including inflationary pressures, rising interest rates, and supply chain disruptions;
- the risk that we may not be able to expand our business or manage our future growth effectively;
- the risk that delays in or not completing our product development and hydrogen plant construction goals may adversely affect our revenue and profitability;
- the risk that we may be unable to successfully pursue, integrate, or execute upon our new business ventures.
- the risk of dilution to our stockholders and/or stock price should we need to raise additional capital;
- the risk that our lack of extensive experience in manufacturing and marketing of certain of our products may impact our ability to manufacture and market products on a profitable and large-scale commercial basis;
- the risk that unit orders may not ship, be installed and/or converted to revenue, in whole or in part;
- the risk that a loss of one or more of our major customers, or if one of our major customers delays payment of or is unable to pay its receivables, a material adverse effect could result on our financial condition;
- the risk that a sale or issuance of a significant number of shares of stock could depress the market price of our common stock;
- the risk that our convertible senior notes, if settled in cash, could have a material effect on our financial results;
- the risk that our convertible note hedges may affect the value of our convertible senior notes and our common stock;
- the risk that negative publicity related to our business or stock could result in a negative impact on our stock value and profitability;
- the risk of potential losses related to any product liability claims or contract disputes;
- the risk of loss related to an inability to remediate the material weaknesses identified in internal control over financial reporting as of December 31, 2022, 2021, 2020, 2019, and 2018, or inability to otherwise maintain an effective system of internal control;
- the risk of loss related to an inability to maintain an effective system of internal controls;
- our ability to attract and maintain key personnel;
- the risks related to the use of flammable fuels in our products;
- the risk that pending orders may not convert to purchase orders, in whole or in part;
- the cost and timing of developing, marketing, and selling our products;

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- the risks involved with participating in joint ventures, including our ability or inability to execute our strategic growth plan through joint ventures;
- our ability to obtain financing arrangements to support the sale or leasing of our products and services to customers;
- our ability to achieve the forecasted revenue and costs on the sale of our products;
- the cost and availability of fuel and fueling infrastructures for our products;
- the risks, liabilities, and costs related to environmental, health, and safety matters;
- the risk of elimination of government subsidies and economic incentives for alternative energy products;
- market acceptance of our products and services;
- our ability to establish and maintain relationships with third parties with respect to product development, manufacturing, distribution, and servicing, and the supply of key product components;
- the cost and availability of components and parts for our products;
- the risk that possible new tariffs could have a material adverse effect on our business;
- our ability to develop commercially viable products;
- our ability to reduce product and manufacturing costs;
- our ability to successfully market, distribute and service our products and services internationally;
- our ability to improve system reliability for our products;
- competitive factors, such as price competition and competition from other traditional and alternative energy companies;
- our ability to protect our intellectual property;
- the risk of dependency on information technology on our operations and the failure of such technology;
- the cost of complying with current and future federal, state and international governmental regulations;
- our subjectivity to legal proceedings and legal compliance;
- the risks associated with past and potential future acquisitions;
- the risks associated with geopolitical instability, including the conflict between Russia and Ukraine and growing tensions between U.S. and China and neighboring regions; and
- the volatility of our stock price.

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

Summary of Risk Factors

The risk factors detailed in Item 1A titled “Risk Factors” in this Annual Report on Form 10-K are the risks that we believe are material to our investors and a reader should carefully consider them. Those risks are not all of the risks we face and other factors not presently known to us or that we currently believe are immaterial may also affect our business if they occur. The following is a summary of the risk factors detailed in Item 1A:

- Our products and performance depend largely on the availability of hydrogen gas and an insufficient supply of hydrogen could negatively affect our sales and deployment of our products and services;
- We may be unable to successfully execute and operate our green hydrogen production projects;
- We face risks associated with our plans to market, distribute and service our products and services internationally;
- The current economic downturn and weakness in the economy, market trends and other conditions affecting the profitability and financial stability of our customers could negatively impact our sales growth and results of operations;
- Delays in or not completing our product development goals may adversely affect our revenue and profitability;

- Our products and services face intense competition;
- We may not be able to expand our business or manage our future growth effectively;
- Our ability to source parts and raw materials from our suppliers could be disrupted or delayed in our supply chain which could adversely affect our results of operations;
- Rising inflation rates, volatility in commodity prices, and product shortages may adversely affect our gross margins and financial results;
- We will continue to be dependent on certain third-party key suppliers for components in our products and failure of a supplier to develop and supply components in a timely manner or at all, or our inability to substitute sources of these components on a timely basis or on terms acceptable to us, could impair our ability to manufacture our products or increase our cost of production;
- 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;
- Our products use flammable fuels that are inherently dangerous substances and an actual or perceived problem with our products could adversely affect the market's perception of our products;
- The reduction or elimination of government subsidies and economic incentives for alternative energy technologies, or the failure to renew such subsidies and incentives, could reduce demand for our products, lead to a reduction in our revenues and adversely impact our operating results and liquidity;
- Our inability to maintain a leadership position to drive hydrogen and green technology subsidies and foster beneficial regulatory interpretation will limit our growth in the market;
- Trade policies, treaties, and tariffs could have a material adverse effect on our business;
- Failure to improve overall service performance and scale sourcing effectively can limit growth and adversely impact our customer experience;
- Our investments in joint ventures may involve numerous risks that may affect the ability of such joint ventures to make distributions to us;
- If we cannot obtain financing to support the sale of our products and service to customers or our power purchase agreements with customers, such failure may adversely affect our liquidity and financial position;
- We may require additional capital funding and such capital may not be available to us;
- We have incurred losses and anticipate continuing to incur losses;
- Our indebtedness could adversely affect our liquidity, financial condition, and our ability to fulfill our obligations and operate our business;
- The accounting method for convertible debt securities that may be settled in cash could have a material effect on our reported financial results;
- The convertible note hedges may affect the value of our common stock;
- We are subject to counterparty risk with respect to the convertible note hedge transactions;
- Certain component quality issues have resulted in adjustments to our warranty accruals and the accrual for loss contracts;
- Our purchase orders may not ship, be commissioned or installed, or convert to revenue, which 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, and potential security breaches of our information technology systems, including cyber-attacks, could lead to liability or could damage our reputation and financial results;
- The implementation of a new enterprise resource planning system could cause disruption to our operations;
- Our future plans could be harmed if we are unable to attract or retain key personnel;
- 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;
- We are subject to legal proceedings and legal compliance risks that could harm our business;
- Our financial results may be adversely affected by changes in accounting principles generally accepted in the United States;
- If our estimates or judgments relating to our critical accounting policies are based on assumptions that change or prove to be incorrect, our operating results could fall below expectations of investors, resulting in a decline in our stock price;
- We identified material weaknesses in our internal control over financial reporting. If we do not effectively remediate these material weaknesses or if we otherwise fail to maintain effective internal control over financial reporting, we may not be able to accurately report our financial results or prevent fraud;

- We are subject to various federal, state, and local environmental and human health and safety laws and regulations that could impose significant costs and liabilities on us;
- Our business may become subject to increased government regulation;
- Changes in tax laws or regulations or adverse outcomes resulting from examination of our income or other tax returns could adversely affect our operating results and financial condition;
- The changes in the carryforward/carryback periods as well as the new limitations on use of net operating losses may significantly impact our valuation allowance assessments for net operating losses;
- We may be unable to establish or maintain relationships with third parties for certain aspects of continued product developments, manufacturing, distribution, sale, servicing, and the supply of key components for our products;
- We may be unable to make attractive acquisitions or successfully integrate acquired businesses, assets, or properties, and any inability to do so may disrupt our business and hinder our ability to grow, divert the attention of key personnel, disrupt our business, and impair our financial results;
- We may be unable to successfully pursue, integrate, or execute upon new business ventures;
- Our stock price and stock trading volume have been and could remain volatile, and the value of your investment could decline;
- Sales of substantial amounts of our common stock in the public markets, or the perception that such sales might occur, could reduce the price that our common stock might otherwise attain and may dilute your voting power and your ownership interest in us;
- If securities analysts do not publish research or reports or if they publish unfavorable or inaccurate research about our business and our stock, the price of our stock and the trading volume could decline;
- 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;
- We do not anticipate paying any dividends on our common stock;
- The choice of forum provisions in our amended and restated bylaws may limit a stockholder's ability to bring a claim in a judicial forum that it finds favorable for disputes with us or any current or former director, officer, other employee, agent, or stockholder; and
- Climate change and climate change policies might affect our business, our industry, and the global economy.

Item 1. Business

Background

Plug is the company behind the end-to-end green hydrogen ecosystem that offers products and solutions ranging from fuel cells to electrolyzers to the production, storage and handling, transportation and dispensing of liquid green hydrogen. Plug is on a mission to make hydrogen adoption easy for its customers and is helping customers meet their business goals and decarbonize the economy. In creating the first commercially viable market for hydrogen fuel cells, the Company has deployed more than 60,000 fuel cell systems for forklifts and more than 180 fueling stations. Plug intends to deliver its green hydrogen solutions directly to its customers, and through joint venture partners into multiple environments, including material handling, e-mobility, power generation, and industrial applications.

Plug is focused on delivering a number of green hydrogen solutions to customers. Its vertically integrated end-to-end solutions, which are designed to fit individual customer needs, include hydrogen production equipment or the delivery of green hydrogen fuel, whichever is preferred including:

- Proton exchange membrane (“PEM”) electrolyzers: Plug electrolyzers use clean electricity to split water into hydrogen and oxygen. Using electrolyzers, customers can generate hydrogen for a variety of applications. In support of the market growth and its own ambitions, Plug has built a state-of-the-art gigafactory to produce electrolyzer stacks in Rochester, New York.
- Hydrogen Liquefiers: Through the acquisition of Joule Processing LLC (“Joule”) in 2022, Plug gained core competency in liquefaction systems known for their operational efficiency, flexibility and reliability. Plug’s hydrogen liquefaction system has one of the most energy-efficient designs on the market utilizing hydrogen as the refrigerant in the main liquefaction cycle.
- Liquid hydrogen tankers: The Plug hydrogen tanker is one of the largest and lightest trailer ever manufactured, with unprecedented over-the-road payloads.

Plug also continues to offer fuel cells, electrochemical devices that combine hydrogen and oxygen to produce electricity and heat without combustion. Opened in 2023, Plug has built a 407,000-square-foot facility in Slingerlands, New York, which includes a 350,000-square-foot world-class fuel cell manufacturing facility to support the growing demand for fuel cells.

Plug delivers end-to-end hydrogen solutions for supply chain and logistics applications, on-road electric vehicles, the stationary power market, and more. Plug has announced that it is currently building green hydrogen generation plants throughout the United States, including in New York, Louisiana, Georgia, California and Texas. The Company expects to begin producing liquid green hydrogen in 2023.

To complete our end-to-end hydrogen ecosystem, Plug is offering high-efficiency liquefaction technology and cryogenic tanker and storage solutions to effectively deliver liquid green hydrogen to customers.

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

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

Business Strategy

Plug understands that green hydrogen is integral to addressing climate change in both the short and long term. Indeed, decarbonization is our very mission. To reach this goal, Plug’s business strategy is focused on the following:

- Expanding hydrogen production, with a focus on both output capabilities and geography. Plug has announced several new hydrogen plants planned for New York, Georgia, Texas California, Louisiana and Port of Antwerp-Bruges. We broke ground on the plants in New York and Georgia. Plug plans to begin producing green hydrogen in 2023.
- Scaling production through electrolyzer and fuel cell gigafactories. In 2021, Plug opened a 155,000-square-foot gigafactory in Rochester, New York. In 2022, Plug expanded manufacturing capacity at our Rochester location and broke ground on, and subsequently, opened within the year our 407,000-square-foot facility in Slingerlands, New York, which includes a 350,000-square-foot world-class fuel cell manufacturing facility to support the growing demand for fuel cells.
- Scaling Plug’s electrolyzer program to provide comprehensive and economical solutions focused on our 5-megawatt (“MW”) and 10MW offerings, and using these building blocks to reach into the gigawatt-scale electrolyzer market.
- Expanding into the on-road vehicles market, including delivery vans/light commercial vehicles with our joint venture with Renault (HyVia), while continuing to explore the aviation market (commuter and cargo planes and drones) and the expansion of available applications in the on-road vehicle market (such as yard tractors, cargo vans, buses, and Class 6, 7 or 8 trucks).
- Expanding into large-scale stationary power market, including backup and continuous power applications, including data centers, microgrids, distribution centers and electric vehicle (“EV”) charging.
- Expanding into new regions that require decarbonization, including in Europe and Asia. Plug entered into joint ventures with Renault SAS (“Renault”) in France, Acciona Generación Renovable, S.A. (“Acciona”) in Spain, and SK E&S Co., Ltd. (“SK E&S”) in South Korea.
- Partnering with or acquiring companies with solutions that play an integral role in building Plug’s green hydrogen ecosystem. In 2022, Plug acquired Joule, an engineered modular equipment process design and procurement company, and acquired two subsidiaries of Cryogenic Industrial Solutions, LLC, Alloy Custom Products, LLC and WesMor Cryogenics, LLC, to bolster the cryogenic tanker and storage tank business resulting from the 2021 acquisition of Applied Cryo Technologies. Plug also created a joint venture with Niloco Hydrogen Holdings LLC, a wholly-owned subsidiary of Olin Corporation (“Olin”), named “Hidrogenii” to support reliability of supply and speed to market for hydrogen throughout North America.

- Plug’s operating strategy objectives include decreasing product and service costs, while expanding system reliability.

We believe continued investment in research and development is critical to the development and enhancement of innovative products, technologies, and services.

Business Organization

In 2022, the Company continued to evolve its organizational design to meet the growing needs of the business and product offerings and align with the strategy discussed above. Our organization is managed from a sales perspective based on “go-to-market” sales channels, emphasizing shared learning across end-user applications and common supplier/vendor relationships. These sales channels are structured to serve a range of customers for our products and services. As a result of this structure, we concluded that we have one operating and reportable segment — the design, development and sale of green hydrogen products and solutions that help customers meet their business goals while decarbonizing their operations. Our chief executive officer was identified as the chief operating decision maker (CODM). All significant operating decisions made by management are largely based upon the analysis of Plug on a total company basis, including assessments related to our incentive compensation plans. The current organizational structure is designed to help Plug achieve its goals and establish Plug as a world leader in green hydrogen solutions.

Products and Services

Plug is facilitating the paradigm shift to an increasingly electrified world by innovating cutting-edge hydrogen and fuel cell solutions.

While we continue to develop commercially viable hydrogen and fuel cell product solutions, we have expanded our offerings to support a variety of commercial operations that can be powered with green hydrogen. We provide electrolyzers that allow customers — such as refineries, producers of chemicals, steel, fertilizer and commercial refueling stations — to generate hydrogen on-site. We are focusing our efforts on (a) industrial mobility applications, including electric forklifts and electric industrial vehicles, at multi-shift high volume manufacturing and high throughput distribution sites where we believe our products and services provide a unique combination of productivity, flexibility, and environmental benefits; (b) stationary power systems that will support critical operations, such as data centers, microgrids, and generation facilities, in either a backup power or continuous power role and replace batteries, diesel generators or the grid for telecommunication logistics, transportation, and utility customers; and (c) production of hydrogen. Plug expects to support these products and customers with an ecosystem of vertically integrated products that produce, transport, store and handle, dispense, and use hydrogen for mobility and power applications.

Our current products and services include:

GenDrive: GenDrive is our hydrogen fueled Proton Exchange Membrane (“PEM”) fuel cell system, providing power to material handling electric vehicles, including Class 1, 2, 3 and 6 electric forklifts, Automated Guided Vehicles (“AGVs”), and ground support equipment.

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

GenCare: GenCare is our ongoing “Internet of Things”-based maintenance and on-site service program for GenDrive fuel cell systems, GenSure fuel cell systems, GenFuel hydrogen storage and dispensing products and ProGen fuel cell engines.

GenSure: GenSure is our stationary fuel cell solution providing scalable, modular PEM fuel cell power to support the backup and grid-support power requirements of the telecommunications, transportation, and utility sectors; GenSure High Power Fuel Cell Platform will support large scale stationary power and data center markets.

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

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. This includes Plug's membrane electrode assembly ("MEA"), a critical component of the fuel cell stack used in zero-emission fuel cell electric vehicle engines.

Electrolyzers: The design and implementation of 5 and 10MW electrolyzer systems that are modular, scalable hydrogen generators optimized for clean hydrogen production. Electrolyzers generate hydrogen from water using electricity and a special membrane and "green" hydrogen is generated by using renewable energy inputs, such as solar or wind power.

Liquefaction Systems: Plug's 15 ton-per-day and 30 ton-per-day liquefiers are engineered for high efficiency, reliability, and operational flexibility — providing consistent liquid hydrogen to customers. This design increases plant reliability and availability while minimizing parasitic losses like heat leak and seal gas losses.

Cryogenic Equipment: Engineered equipment including trailers and mobile storage equipment for the distribution of liquified hydrogen, oxygen, argon, nitrogen and other cryogenic gases.

We provide our products and solutions worldwide through our direct sales force, and by leveraging relationships with original equipment manufacturers ("OEMs") and their dealer networks. Plug is currently targeting Asia, Australia, Europe, Middle East and North America for expansion in adoption. The European Union (the "EU") has rolled out ambitious targets for the hydrogen economy as part of the EU strategy for energy integration and Plug is seeking to execute on our strategy to become one of the European leaders in the hydrogen economy. This includes a targeted account strategy for material handling, securing strategic partnerships with European OEMs, energy companies, utility leaders and accelerating its electrolyzer business. Our global strategy includes leveraging a network of integrators or contract manufacturers.

Part of our long-term plan includes Plug penetrating the European and Asian hydrogen market, on-road vehicle market, and large-scale stationary market. Plug's formation of joint ventures with HyVia and AccionaPlug S.L. in Europe and SK Plug Hyverse Co., Ltd. ("SK Plug Hyverse"), in Asia not only support this goal but are expected to provide us with a more global footprint. Plug has been successful with acquisitions, strategic partnerships and joint ventures, and we plan to continue this mix.

We manufacture our commercially viable products in Latham, New York, Rochester, New York, Slingerlands, New York, Houston, Texas, Lafayette, Indiana, and Spokane, Washington, and support liquid hydrogen production and logistics in Charleston, Tennessee and Kingsland, Georgia.

Markets/Geography & Customer Concentration

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. The Company has historically experienced fluctuations in its quarterly operating results, with more revenue typically recognized in the second half of the fiscal year as compared to the first half.

Orders for the Company's products and services approximated \$1.2 billion at December 31, 2022. The Company's orders at any given time are comprised of fuel cells, hydrogen installations, maintenance services, electrolyzers, liquefiers, hydrogen trailers, and hydrogen fuel deliveries. The specific elements of the orders will vary in terms of timing of delivery and can vary between 90 days to 10 years, with fuel cells and hydrogen installations being delivered near term and maintenance services and hydrogen fuel deliveries being delivered over a longer period of time. Historically, shipments made against product orders have generally occurred between ninety days and twenty-four months from the date of acceptance of the order.

For the year ended December 31, 2022, Amazon.com Inc. ("Amazon"), accounted for 13.0% of our total consolidated revenues, which included a provision for warrant charge of \$5.6 million. Additionally, 37.0% of our total consolidated revenues were associated primarily with two other customers.

We assemble our products at our manufacturing facilities in Latham, New York, Rochester, New York, Slingerlands, New York, Houston, Texas, Lafayette, Georgia, and Spokane, Washington, and provide our services and

installations at customer locations and service centers in Romeoville, Illinois and Dayton, Ohio. In addition, we have a hydrogen production plant in Charleston, Tennessee, and Kingsland, Georgia. In 2022, we opened a warehouse and logistics center in Duisberg, Germany.

Working Capital Items

We currently maintain inventory levels adequate for our short-term needs based upon present levels of production and for the purposes of global supply chain risk management. We consider the component parts of our different products to be generally available and current suppliers to be reliable and capable of satisfying anticipated needs. However, we have seen shortages of materials needed to produce fuel cell and hydrogen generation equipment components due to constraints in the production of global semiconductors, MEA components, and due to general supplier performance related to the COVID-19 pandemic, labor shortages, increasing energy prices, supply chain constraints and logistical challenges. These material shortages have also negatively impacted the pricing of materials and components sourced or used by the Company.

Distribution, Marketing and Strategic Relationships

We have developed strategic relationships with 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, Europe, and Asia, through our direct product sales force, OEMs, and their dealer networks. We operate in Europe under the name Plug Power Europe to develop and sell hydrogen fuel cell systems for the European material handling market.

Our wholly-owned subsidiary, Plug Power LA JV, LLC, created a joint venture with Niloco Hydrogen Holdings LLC, named “Hidrogenii” in the third quarter of 2022. We believe Hidrogenii will support reliability of supply and speed to market for hydrogen throughout North America, and set the foundation for broader collaboration between Plug and Olin. Hidrogenii plans to begin with the construction of a 15-ton-per-day hydrogen plant in St. Gabriel, Louisiana. Hidrogenii is owned 50% by Plug Power LA JV, LLC and 50% by Niloco Hydrogen Holdings LLC.

Our wholly-owned subsidiary, Plug Power France, entered into a joint venture with Renault named HyVia in the second quarter of 2021. HyVia plans to manufacture and sell fuel cell powered electric light commercial vehicles (“FCELCVs”) and to supply hydrogen fuel and fueling stations to support the FCE-LCV market, in each case primarily in Europe. HyVia is owned 50% by Plug Power France and 50% by Renault.

Our wholly-owned subsidiary, Plug Power Espana S.L. (“Plug Power Spain”), entered into a joint venture with Acciona, named AccionaPlug S.L., in the fourth quarter of 2021. AccionaPlug S.L. is owned 50% by Plug Power Spain and 50% by Acciona. The joint venture intends to develop green hydrogen projects in Spain and Portugal.

Plug Power Inc. entered into a joint venture with SK E&S named SK Plug Hyverse, which was funded in the first quarter of 2022. The joint venture with SK E&S seeks to accelerate the use of hydrogen as an alternative energy source in Asian markets. Through this initiative, the two companies will collaborate to provide hydrogen fuel cell systems, hydrogen fueling stations, electrolyzers and green hydrogen to the Korean and other Asian markets. This joint venture is owned 49% by Plug Power Inc. and 51% by SK E&S.

In addition, Plug’s acquisitions over the last several years are enhancing Plug’s position in the hydrogen industry, complementing the Company’s industry-leading position in the design, construction, and operation of customer-facing hydrogen fueling stations. These acquisitions are expected to further establish a pathway for Plug to transition from low-carbon to zero-carbon hydrogen solutions.

Competition

We experience competition in all areas of our business. The markets we address for motive and backup power are characterized by the presence of well-established battery and combustion generator products. We also face competition from integrated gas companies, and companies offering Steam Methane Reformers and electrolyzers. We believe the principal competitive factors in the markets in which we operate include product features, including size and weight, relative price and performance, lifetime operating cost, including any maintenance and support, product quality and

reliability, safety, ease of use, foot print, rapid integration with existing equipment and processes, customer support design innovation, marketing and distribution capability, and service and support and corporate reputation.

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 65 issued patents currently active with the United States Patent and Trademark Office (“USPTO”), expiring between 2023 and 2040. At the close of 2022, we had 23 U.S. patent applications pending. Additionally, we have 22 trademarks registered with the USPTO expiring between 2023 and 2032, and three trademark applications pending.

Government Regulation

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

In addition, product safety standards have been established by the American National Standards Institute (“ANSI”), covering the overall fuel cell system. The class 1, 2, and 3 GenDrive products are designed with the intent of meeting the requirements of UL 2267 “Fuel Cell Power Systems for Installation in Industrial Electric Trucks” and NFPA 505 “Fire Safety Standard for Powered Industrial Trucks.” The hydrogen tanks used in these systems have been either certified to ANSI/CSA NGV2-2007 “Compressed Natural Gas Vehicle Fuel Containers” or ISO/TS 15869 “Gaseous hydrogen and hydrogen blends —Land vehicle fuel tanks.” We will continue to design our GenDrive products to meet ANSI and/or other applicable standards. We certified several models of Class 1, 2, and 3 GenDrive products to the requirements of the CE mark with guidance from a European certified body. The hydrogen tanks used in these systems are certified to the Pressure Equipment Directive by a European certified body. The GenFuel hydrogen storage and dispensing products are designed with the intent of meeting the requirements of NFPA 2 “Hydrogen Technologies Code.” We are also subject to standards as applied to the design of our electrolyzer products, both domestically and abroad. Such standards include, but are not limited to, “Hydrogen Generators Using Water Electrolysis” (ISO 22734), “Hydrogen Technologies Code” (NFPA 2), “Explosive Atmospheres” requirements (UL 60079), CE product standards within the European Commission, and AS/NZS standards for our products within each jurisdiction, as applicable. As our Company increasingly expands to new markets and jurisdiction, we also become currently subject to new and different regulations in such jurisdictions.

We are subject to various federal, state, local, and non-U.S. environmental and human health and safety laws and regulations, including laws and regulations relating to the use, handling, storage, transportation, disposal and human exposure to hazardous substances and wastes, product safety, and emissions of pollution into the environment, and the remediation of contamination. Our facilities in the United States are subject to regulation by the Occupational Safety and Health Administration (“OSHA”), which regulates the protection of the health and safety of workers. In addition, the OSHA hazard communication standard requires that we maintain information about hazardous materials used or produced in our operations and that we provide this information to employees, state and local governmental authorities and local residents. We are also subject to occupational safety regulations in other countries. In addition, certain environmental laws and regulations impose liability and responsibility on present and former operators or users of facilities and sites for contamination at such facilities and sites without regard to causation or knowledge of contamination. Compliance with environmental laws and regulations can significantly increase the costs of our operations. Violations of environmental laws and regulations can subject us to additional costs and expenses, including defense costs and expenses and civil and

criminal penalties. Environmental laws and regulations are becoming increasingly stringent, and compliance costs are significant and will continue to be significant in the foreseeable future. There can be no assurance that existing or future environmental and human health and safety laws and regulations will not have a material effect on our business.

As our business expands — particularly as part of our green hydrogen production strategy — we will continue to evaluate the potential impact such provisions will have on our business, as applied to each relevant jurisdiction in which we conduct business. We do not believe that existing or pending climate change legislation, regulation, or international treaties or accords are reasonably likely to have a material adverse effect in the foreseeable future on our business or markets that we serve, or on our results of operations, capital expenditures or financial position. However, there is no guarantee that any such legislation, regulation, or international treaties or accords will be favorable to our business. We will continue to monitor emerging developments in this area.

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.

See Item 1A, “Risk Factors” for a description of these governmental regulations and other material risks to us, including, to the extent material, to our competitive position.

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, electrolyzer 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. Recent cost pressures from global energy prices and inflation have negatively impacted access to our key raw materials. In cases where we have single sourced suppliers (typically due to new technology and products), we engineer or develop new supply sources while covering short- and medium-term risks with supply contracts, inventory, and development partnerships.

Additionally, in January 2023, the Company entered into a strategic partnership with Johnson Matthey Hydrogen Technologies Limited, a subsidiary of Johnson Matthey PLC and a global leader in sustainable technologies (“JM”), pursuant to which JM will supply the Company catalyst coated membrane (CCM) for use in the production of fuel cells as well as catalysts and membranes for use in the production of electrolyzers. In addition, the Company and JM intend to develop their existing and new technology and commercial products and co-invest in a manufacturing facility in the United States.

Research and Development

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

We may also expand the range of our product offerings and intellectual property through licensing and/or acquisition of third-party business and technology. Our research and development expense totaled \$99.6 million, \$64.8 million, and \$27.8 million during the years ended December 31, 2022, 2021, and 2020, respectively.

Human Capital Resources

As of December 31, 2022, we had 3,353 employees, of which 156 are temporary employees, with 2,941 located in the United States and 412 located outside of the United States. In order to facilitate talent attraction and retention, we strive to make Plug a safe, rewarding, and challenging workplace with competitive salaries.

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Our employees are critical to the Company's growth, expansion, and success, and we consider our relationship with our employees to be positive. The Company is dedicated to fostering a culture of diversity and committed to hiring talented individuals from all backgrounds and perspectives to which the Company's ultimate success is linked.

Diversity, Equity & Inclusion

We take tremendous pride in being an Equal Opportunity/Affirmative Action Employer and actively seek to increase the racial, gender, and ethnic diversity of our Company.

At Plug, we are powered by the collective differences of our employees, customers, and stakeholders, and we value different perspectives to solve complex problems and bring innovative solutions. We promise to listen and hear inspiration from around the globe, to champion inclusivity, and respect for each other, and to celebrate our differences as we build an environment in which we are all proud to be a part.

- **Diversity:** We embrace the unique characteristics and social identities of our employees. Collectively, these individual differences enhance our culture and company achievements. We believe that our strength comes from our intellectual and social diversity and that diversity powers innovation and inspires our team.
- **Equity:** All employees have equal opportunity to advance. People are the power of Plug, and we are committed to the investment in our employees. We pledge to provide everyone at Plug with equal opportunity to grow and develop, leveraging the unique skills and differences of their individual background, characteristics, and aspirations.
- **Inclusion:** We are on a journey to cultivate inclusivity as an organization. At Plug, we are transparent and collaborative, welcoming ideas, thoughts, and questions from everyone. We respect different strengths and viewpoints, understanding that we are stronger together. Perspectives from the collective whole make us better, as we know that we are all part of something bigger than ourselves.

The Company also strives to promote diversity on its Board of Directors (the "Board" or "Board of Directors") and in leadership roles throughout the Company. Currently, three of the Company's 10 directors are female, and two of the Company's 10 directors identify as an under-represented minority. The Company's commitment to diversity throughout the organization is further enhanced by policies related to various aspects of employment, including but not limited to, recruiting, selecting, hiring employment placement, job assignment, compensation, access to benefits, selection for training, use of facilities, and participation in Company-sponsored employee activities.

To progress further on our Diversity, Equity and Inclusion ("DEI") initiatives such as recruitment, talent development, and equitable compensation packages, we have established a Diversity, Equity and Inclusion Policy. Our DEI Policy recognizes that our individual differences – backgrounds, experiences, identities, and perspectives – drive the creativity and innovation fueling Plug Power's growth. Plug supports various diversity, equity, and inclusion efforts throughout its operations, and these efforts include a focus on:

- Recruiting and retaining talent from diverse backgrounds;
- Creating awareness of diversity issues and benefits including training on conduct that can be perceived as discriminatory and/or harassing and how to report such behaviors;
- Supporting our employees' learning and development, so that they can reach their full potential;
- Fostering a more supportive environment where inclusivity is expected and prioritized; and
- Embedding accountability for diversity throughout the organization.

Additionally, we work specifically with veteran recruitment firms and are proud of our efforts to hire those who have served and continue to serve in the armed forces. As of December 31, 2022, we had a 290 person veteran workforce.

Engagement

We believe that listening to our employees is key to providing a work environment that is inclusive and results in a motivated and engaged workforce. We regularly conduct anonymous employee surveys to understand where we have opportunities to improve and solicit ideas from employees. Several initiatives have been launched, such as focus groups with Human Resources and leadership and hiring an employee engagement and inclusion manager to focus on these efforts.

We conduct regular employee engagement surveys to measure progress and satisfaction with a range of initiatives. In our most recent survey in August 2022, employees indicated they would recommend Plug as a great place to work and they are happy working at Plug. The insights from the most recent survey allowed us to review employee feedback at each function and Business Unit level to drive impactful action, including developing specific training programs to improve and enhance technical processes and increasing team collaboration and effectively using meeting time to foster focus and clarity. Plug's top strengths were prospects, purpose, and authenticity. Employees indicated they were excited about Plug's future; they believe they are doing meaningful work at Plug and feel comfortable being themselves at work.

We also believe that transparency and communication are key elements of the Company's culture. Since the onset of the COVID-19 pandemic, a weekly all employee meeting led by our Chief Executive Officer and Executive Vice President of Human Resources provide information on safety measures as relates to the Company's practice on COVID-19. The meeting also includes a timely business topic delivered by a subject matter expert within the Company. This provides timely information and opportunities for upcoming leaders to develop their presentation skills, and aims to align the workforce with the Company's vision, strategy, and objectives. An open question and answer session is hosted as part of the weekly employee meeting by the Chief Executive Officer, in which employees are encouraged to submit questions and can do so anonymously if they prefer.

Community Involvement

We recognize the importance of supporting our local communities as we continue to grow as an organization. Our efforts not only provide value back to our community members but enables our employees to give back, helping them to meet their own values. We also facilitate employee donations through the United Way, supporting its four pillar objectives helping our communities, which includes the (1) ability to meet basic needs, (2) education leading to a good job, (3) income providing financial security, and (4) an ability to gain and maintain health. This system enables our employees to donate money to causes they care about in their individual communities through payroll deductions.

Additionally, in 2022, we launched a global volunteer time off policy to support activities that serve the communities in which we live and work in ways that are meaningful, impactful, and help those in need. Plug recognizes that participating in philanthropic activities enriches the lives of its employees and its communities.

Performance Management and Incentives

Our full-year performance management process begins with setting annual goals for the Company, which guide the development of functional and individual employee goals. Employees and their managers are accountable for goals and must review performance against the goals on an ongoing basis. We provide employee base wages that are competitive and consistent with employee positions, skill levels, experience, and location. Additionally, we believe that individual performance and the results of the Company are directly linked to payment of annual short-term incentive compensation. Employees may also be granted equity compensation awards with multi-year vesting for retention.

Talent

Our talent strategy is a balance of attracting external talent, combined with an internal mobility practice that encourages career growth and opportunity to progress within Plug. We leverage both internal and external recruitment resources and incentivize our current employees to refer talent they recommend as future employees of Plug. Enculturation of new hires begins immediately upon acceptance of an offer from Plug by leveraging technology to introduce them to the organization and their teams. A new hire onboarding program is delivered bi-weekly to continue the assimilation process and ensure that the workforce is prepared to succeed in their new career endeavor.

Plug values the unique skills and competencies of our diverse workforce. A key component to planning for individual career growth aligned with organizational growth is learning and development. We offer the entire workforce a subscription to on-line learning that includes thousands of professionally created on-demand webinars and podcasts. Additionally, we have offered remote led leadership training throughout the COVID-19 pandemic with plans to continue in this new remote and hybrid environment. We also offer a tuition reimbursement program, where employees are provided support for continuing their education. On the job training, combined with face-to-face and remote skill training are utilized in many functions, as well as virtual reality skill training to ensure that skills are refreshed regularly. We use a comprehensive training matrix in certain areas and web-based learning to make sure we meet both regulatory requirements

and our own standards. Besides job-specific safety training, we offer personal-development training on many topics, including sustainability and wellness.

Additional development opportunities include opportunities to participate in employee led groups that develop leadership and project management capabilities while contributing to our purpose and mission. On-line participation in internally developed business-related courses called *Plugology* is encouraged for all employees and helps newly hired employees assimilate to the business.

Compensation and Benefits

As part of our commitment to our people, Plug offers employees competitive benefits, including health, vision, and dental plans, flexible spending accounts, comprehensive life insurance (including company provided life insurance), and disability coverage. Additionally, employees are offered a vacation and holiday package, an employee referral bonus program, educational assistance, and volunteer time. We also offer a comprehensive wellness program that is designed to promote long-term healthy, active lifestyles and our Fitness Reimbursement Program provides up to \$1,200 per year to accommodate employees' wellness activities. In 2022, we also launched a paid parental leave policy to aid in bonding time for new parents. At Plug, 92.9% of our employees participate in our comprehensive 401(k) package that includes a 401(k)-retirement savings plan, which offers up to a 5% match in Plug stock. To encourage savings, we auto-enroll all employees in the plan after 60 days of employment. Our portfolio reflects our values with increased priority given to socially responsible investing — the plan's diversified investment options include two socially responsible funds.

Additionally, we have an internal *Step Pay Program* which provides our Field Service Technicians an outlined career path of training for eight separate levels to grow their skills and compensation.

The Company believes that identifying and developing the next generation of business leaders is important to its long-term success and is proud to support employees in furthering their education with tuition reimbursement plans and training.

COVID-19 Health Measures

While we no longer enforce our prior COVID-19 policies with respect to weekly COVID-19 testing, face coverings, or daily COVID-19 questionnaires, we continue to monitor the COVID-19 pandemic and emerging variants and remain prepared to adjust our policies and safety protocols in line with guidance from state and federal agencies. Employees are still expected to remain home if they are not feeling well and should contact our COVID team for future guidance. Furthermore, we have resumed all commercial air travel and all other non-critical travel, while also allowing employees to resume their personal travel. We have enabled third-party access to our facilities and are continuing our normal janitorial and sanitary procedures. We are no longer requiring staggered shifts in our manufacturing facilities and are offering hybrid work schedules to those whose job function enabled them to do so.

The COVID-19 pandemic has caused significant transportation challenges for global suppliers and we expect that these challenges will continue to have an impact on our businesses for the foreseeable future. We continue to take proactive steps to limit the impact of these challenges and are working closely with our suppliers and transportation vendors to ensure availability of products and implement other cost savings initiatives. In addition, we continue to invest in our supply chain to improve its resilience with a focus on automation, dual sourcing of critical components and localized manufacturing when feasible. To date, there has been limited disruption to the availability of our products related to COVID-19, though it is possible that more significant disruptions could occur if these supply chain challenges continue.

Available Information

Our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, including exhibits, and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act are available free of charge, other than an investor's own internet access charges, on the Company's website at www.plugpower.com as soon as reasonably practicable after the Company electronically files such material with, or furnishes it to, the 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>.

We may announce material business and financial information to the public about us, our products and services, and other matters through a variety of means, including filings with the SEC, press releases, public conference calls, webcasts, the investor relations section of our website (www.ir.plugpower.com) and our Twitter account at @PlugPowerInc in order to achieve broad, non-exclusionary distribution of information to the public and for complying with our disclosure obligations under Regulation FD. We encourage investors, the media, and others interested in Plug to follow the foregoing channels and review the information that we make available on such channels, in addition to following our filings with the SEC.

Item 1A. Risk Factors

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

A. MARKET RISKS

We may be unable to successfully execute and operate our green hydrogen production projects and such projects may cost more and take longer to complete than we expect.

As part of our vertical integration strategy, the Company is developing and constructing green hydrogen production facilities at locations across the United States and Europe. Our ability to successfully complete and operate these projects is not guaranteed. These projects will impact our ability to meet and supplement the hydrogen demands for our products and services, for both existing and prospective customers. Our hydrogen production projects are dependent, in part, upon the Company's ability to meet our internal demand for electrolyzers required for such projects. Electrolyzer demand by external customers may concurrently affect the Company's ability to meet the internal electrolyzer demand from our hydrogen production projects. The timing and cost to complete the construction of our hydrogen production projects are subject to a number of factors outside of our control and such projects may take longer and cost more to complete and become operational than we expect.

The viability and competitiveness of our green hydrogen production facilities will depend, in part, upon favorable laws, regulations, and policies related to hydrogen production. Some of these laws, regulations, and policies are nascent, and there is no guarantee that they will be favorable to our projects. Additionally, our facilities will be subject to numerous and new permitting, regulations, laws, and policies, many of which might vary by jurisdiction. Hydrogen production facilities are also subject to robust competition from well-established multinational companies in the energy industry. There is no guarantee that our hydrogen production strategy will be successful, amidst this competitive environment.

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

Our products and services depend largely on the availability of hydrogen gas. Although we are in the process of building multiple hydrogen production plants, our business could be materially and adversely affected by an inadequate

availability of hydrogen or failure to secure hydrogen supply at competitive prices. There is no assurance that our hydrogen production will scale at the rate we anticipate or that we will complete hydrogen production plants on schedule. Additionally, we are dependent upon hydrogen suppliers to provide us with hydrogen gas for the commercialization of our products and services. If these fuels are not readily available or if their prices are such that energy produced by our products costs more than energy provided by other sources, then our products could be less attractive to potential users and our products' value proposition could be negatively affected. If hydrogen suppliers elect not to participate in the material handling market, there may be an insufficient supply of hydrogen for this market that could negatively affect our sales and deployment of our products and services.

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

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

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, including but not limited to joint ventures involving potential business activities in, Europe, South Korea, India, Vietnam, and elsewhere, we may face numerous challenges. Such challenges might include unexpected changes in regulatory requirements; potential conflicts or disputes that countries may have to deal with, among other things, data privacy requirements; labor laws and anti-competition regulations; export or import restrictions; laws and business practices favoring local companies; fluctuations in currency exchange rates; longer payment cycles and difficulties in collecting accounts receivables; difficulties in managing international operations; potentially adverse tax consequences, tariffs, customs charges, bureaucratic requirements and other trade barriers; restrictions on repatriation of earnings; and the burdens of complying with a wide variety of international laws. We face risks associated with our plans to market, distribute, and service our products and services internationally and any of these factors could adversely affect our results of operations and financial condition. The success of our international expansion will depend, in part, on our ability to succeed in navigating the different legal, regulatory, economic, social, and political environments.

The current inflationary trends, economic downturn and weakness in the economy, market trends, and other conditions affecting the profitability and financial stability of our customers could negatively impact our sales growth and results of operations.

The demand for our products and services is sensitive to the production activity, capital spending and demand for products and services of our customers worldwide. In recent months, we have observed increased economic uncertainty in the United States and abroad, including inflation and higher interest rates. Impacts of such economic weakness include falling overall demand for goods and services, leading to reduced profitability, reduced credit availability, higher borrowing costs, reduced liquidity, volatility in credit, equity and foreign exchange markets, and bankruptcies. These developments have led to supply chain disruption and transportation delays which have caused incremental freight charges, which have negatively impacted our business and our results of operations. In addition, as our customers react to global economic conditions and the potential for a global recession, we have seen them reduce spending on our products and take additional precautionary measures to limit or delay expenditures and preserve capital and liquidity. Reductions in spending on our solutions, delays in purchasing decisions, lack of renewals, inability to attract new customers, uncertainty about business continuity as well as pressure for extended billing terms or pricing discounts, could limit our ability to grow our business and negatively affect our operating results and financial condition.

Additionally, many of our customers operate in markets that may be impacted by market uncertainty, trade and tariff policies, costs of goods sold, currency exchange rates, central bank interest rate changes, foreign competition,

offshoring of production, oil and natural gas prices, geopolitical developments, labor shortages, inflation, and a variety of other factors beyond our control. Any of these factors could cause customers to idle or close facilities, delay purchases, reduce production levels, or experience reductions in the demand for their own products or services, and other conditions affecting the profitability and financial stability of our customers could negatively impact our sales growth and results of operations.

Our products and services face intense competition.

The markets for energy products, including PEM fuel cells, electrolyzers, and hydrogen production are intensely competitive. Our recent expansion into electrolyzer manufacturing and hydrogen production similarly faces robust competition — both from incumbent companies and new emerging business interests in the United States and abroad. Some of our competitors are much larger than we are and may have the manufacturing, marketing and sales capabilities to complete research, development, and commercialization of 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. Well established companies might similarly seek to expand into new types of energy products, including PEM fuel cells, electrolyzers, or hydrogen production. Additionally, some competitors may rely on other different competing technologies for fuel cells, electrolyzers, or hydrogen production. We believe our technologies have many advantages. In the near future, we expect the demand for our products — electrolyzers in particular — to largely offset any hypothetical market preference for competing technologies. However, changes in customer preferences, the marketplace, or government policies could favor competing technologies. The primary current value proposition for our fuel cell customers stems from productivity gains in using our solutions. Longer term, given evolving market dynamics and changes in alternative energy tax credits, if we are unable to successfully develop future products that are competitive with competing technologies in terms of price, reliability and longevity, customers may not buy our products. Technological advances in alternative energy products, battery systems or other fuel cell, electrolyzer, or hydrogen technologies may make our products less attractive or render them obsolete.

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

Some of our products contain commodity-priced materials. Commodity prices and supply levels affect our costs. For example, nickel, platinum and iridium are key materials in our PEM fuel cells, electrolyzers, and hydrogen infrastructure. Both platinum and iridium are scarce natural resources, and we are dependent upon a sufficient supply of these commodities. These resources may become increasingly difficult to source due to various cost, geopolitical, or other reasons, which in turn might have a material adverse effect on our business.

While we do not anticipate significant near- or long-term shortages in the supply of platinum or iridium, a shortage could adversely affect our ability to produce commercially viable PEM fuel cells, PEM electrolyzers, or hydrogen production facilities, or raise our cost of producing such products and services. In addition, global inflationary pressures have recently increased, which could potentially increase commodity price volatility. Our ability to pass on such increases in costs in a timely manner depends on market conditions, and the inability to pass along cost increases could result in lower gross margins.

We will continue to be dependent on certain third-party key suppliers for components in our products. The failure of a supplier to develop and supply components in a timely manner or at all, or our inability to obtain substitute sources of these components on a timely basis or on terms acceptable to us, could impair our ability to manufacture our products or could increase our cost of production.

We rely on certain key suppliers for critical components in our products, and there are numerous other components for our products that are sole sourced. If we fail to maintain our relationships with our suppliers or build relationships with new suppliers, or if suppliers are unable to meet our demand, we may be unable to manufacture our products, or our products may be available only at a higher cost or after a delay. The Company has experienced and may continue to experience supply chain-related delays for components of product lines, hydrogen generation projects, and manufacturing facilities. 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. Furthermore, we may become increasingly subject to domestic content sourcing requirements and Buy America preferences, as required by

federal infrastructure funding and various tax incentives in the United States, and we may become subject in the future to domestic sourcing requirements that may become relevant to the European Union. Domestic content preferences potentially mandate our Company to source certain components and materials from United States-based suppliers and manufacturers. Conformity with these provisions potentially depends upon our ability to increasingly source components or materials from within the United States. An inability to meet these requirements could have a material adverse effect on the Company's ability to successfully leverage tax incentives or compete for certain federal infrastructure funding sources imposing such mandates.

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

We depend on a concentration of pedestal 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 pedestal customers, and while we are continually seeking to expand our customer base, we expect this will continue for the next several years. Total revenue in 2022 for Amazon was \$97.5 million, which included a provision for warrant charges of \$5.6 million. For the year ended December 31, 2022, Amazon accounted for 14% of our total consolidated revenues. Total revenue in 2021 for Amazon was \$205.1 million, which included a provision for warrant charges of \$0.5 million. For the year ended December 31, 2021, Amazon accounted for 40.8% of our total consolidated revenues.

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.

In addition, as of December 31, 2022, one customer comprised approximately 24.9% of the total accounts receivable balance. At December 31, 2021, one customer comprised approximately 46.6% of the total accounts receivable balance. If one of our major customers delays payment of or is unable to pay their receivables, that could have a material adverse effect on our business, financial condition, results of operations and cash flows.

Rising inflation rates may adversely affect our financial results.

Global inflationary pressures, particularly in the United States, have increased recently to levels not seen in recent years, which could potentially increase commodity price volatility, increased operating costs (including our labor costs) and reduced liquidity. In addition, the United States Federal Reserve has raised, and may again raise, interest rates in response to concerns about inflation, which may result in limitations on our ability to access credit or otherwise raise debt and equity capital. Our ability to pass on such increases in costs in a timely manner depends on market conditions, and the inability to pass along cost increases could result in lower gross margins. Increases in interest rates, especially if coupled with reduced government spending and volatility in financial markets, may have the effect of further increasing economic uncertainty and heightening these risks. In an inflationary environment, we may be unable to raise the sales prices of our products and services at or above the rate at which our costs increase, which could reduce our profit margins and have a material adverse effect on our financial results. We also may experience lower than expected sales and potential adverse impacts on our competitive position if there is a decrease in consumer spending or a negative reaction to our pricing. A

reduction in our revenue would be detrimental to our financial condition and could also have an adverse impact on our future growth.

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

Our operations require significant amounts of necessary parts and raw materials. We deploy a continuous, companywide process to source our parts and raw materials from fewer suppliers, and to obtain parts from suppliers in low-cost countries where possible. If we are unable to source these parts or raw materials, our operations may be disrupted, or we could experience a delay or halt in certain of our manufacturing operations. We believe that our supply management and production practices are based on an appropriate balancing of the foreseeable risks and the costs of alternative practices. Nonetheless, reduced availability or interruption in supplies, whether resulting from more stringent regulatory requirements, supplier financial condition, increases in duties and tariff costs, disruptions in transportation, an outbreak of a severe public health pandemic, such as the COVID-19 pandemic, including resurgences and the emergence of new variants, severe weather, or the occurrence or threat of wars or other conflicts, could have an adverse effect on our financial condition, results of operations and cash flows. For example, the Company has experienced supply chain issues related to the COVID-19 pandemic, including but not limited to suppliers utilizing force majeure provisions under existing contracts. Furthermore, the ongoing global economic recovery from the COVID-19 pandemic has caused significant challenges for global supply chains resulting in inflationary cost pressures, component shortages, and transportation delays. We expect that these challenges could continue to have an impact on our businesses for the foreseeable future.

Our investments in joint ventures may involve numerous risks that may affect the ability of such joint ventures to make distributions to us.

We currently conduct some of our operations through joint ventures, with such partners including SK E&S, Renault, Acciona, and Olin in which we share control with our joint venture participants. Investments in joint ventures may involve risks not present when a third party is not involved, including the possibility that our joint venture participants might experience business or financial stress that impact their ability to effectively operate the joint venture, or might become bankrupt or may be unable to meet their economic or other obligations, in which case joint venture may be unable to access needed growth capital without additional funding from us. In addition, our joint venture participants may have economic, tax, business or legal interests or goals that are inconsistent with ours, or those of the joint venture, and may be in a position to take actions contrary to our policies or objectives. Furthermore, joint venture participants may take actions that are not within our control, which may expose our investments in joint ventures to the risk of lower values or returns. Disputes between us and co-venturers may result in litigation or arbitration that could increase our expenses and prevent our officers and/or directors from focusing their time and efforts on our day-to-day business. In addition, we may, in certain circumstances, be liable for the actions of our co-venturers. Each of these matters could have a material adverse effect on us.

We made certain assumptions and projections regarding the future of the markets served by our joint venture investments that included projected raw material availability and pricing, production costs, market pricing and demand for the joint venture's products. These assumptions were an integral part of the economics used to evaluate these joint venture investment opportunities prior to consummation. To the extent that actual market performance varies from our models, our ability to achieve projected returns on our joint venture investments may be impacted in a materially adverse manner. Failure by us, or an entity in which we have a joint venture interest, to adequately manage the risks associated with such joint ventures could have a material adverse effect on the financial condition or results of operations of our joint ventures and, in turn, our business and operations. In addition, should any of these risks materialize, it could have a material adverse effect on the ability of the joint venture to make future distributions to us.

B. FINANCIAL AND LIQUIDITY RISKS

If we cannot obtain financing to support the sale of our products and service to our customers or our power purchase agreements with customers, such failure may adversely affect our liquidity and financial position.

Customers representing most of our revenue access our products through Power Purchase Agreements ("PPAs"), rather than a direct purchase. These PPA arrangements require us to finance the purchase of such products, either ourselves or through third-party financing sources. To date, we have been successful in obtaining or providing the necessary financing arrangements. There is no certainty, however, that we will be able to continue to obtain or provide adequate

financing for these arrangements on acceptable terms, or at all, in the future. Failure to obtain or provide such financing may result in the loss of material customers and product sales, which could have a material adverse effect on our business, financial condition, and results of operations. Further, if we are required to continue to pledge or restrict substantial amounts of our cash to support these financing arrangements, such cash will not be available to us for other purposes, which may have a material adverse effect on our liquidity and financial position. For example, as of December 31, 2022, approximately \$858.7 million of our cash is restricted to support such leasing arrangements, comprised of cash deposits and collateralizing letters of credit, which prevents us from using such cash for other purposes.

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

As of December 31, 2022, we had cash and cash equivalents of \$690.6 million, restricted cash of \$858.7 million and net working capital of \$2.7 billion (which is comprised of the net amount of current assets of \$3.3 billion and current liabilities of \$635.3 million). This compares to cash and cash equivalents of \$2.5 billion, restricted cash of \$650.9 million and net working capital of \$4.0 billion (which is comprised of the net amount of current assets of \$4.4 billion and current liabilities of \$420.6 million) as of December 31, 2021.

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 and equipment related to PPAs for 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 Asia, continued development and expansion of our products, such as ProGen, payment of lease obligations under sale/leaseback financings, mergers and acquisitions, strategic investments and joint ventures, liquid hydrogen plant construction, expanding production facilities and the repayment or refinancing of our long-term debt. Our ability to meet future liquidity needs and capital requirements will depend upon numerous factors, including the timing and quantity of product orders and shipments; attaining and expanding positive gross margins across all product lines; the timing and amount of our operating expenses; the timing and costs of working capital needs; the timing and costs of building a sales base; the ability of our customers to obtain financing to support commercial transactions; our ability to obtain financing arrangements to support the sale or leasing of our products and services to customers, 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. We cannot assure you that any necessary additional financing will be available on terms favorable to us, or at all.

In periods when the capital and credit markets experience significant volatility, the amounts, sources and cost of capital available to us may be adversely affected. We primarily use external financing to provide working capital needed to operate and grow our business. Sufficient sources of external financing may not be available to us on cost effective terms.

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 attributable to common stockholders were \$724.0 million in 2022, \$460.0 million in 2021, and \$596.2 million in 2020. As of December 31, 2022, we had an accumulated deficit of \$3.1 billion. We anticipate that we will continue to incur losses until we can produce and sell our products and services on a large-scale and cost-effective basis. We cannot guarantee when we will operate profitably, if ever. In order to achieve profitability, we must successfully execute our planned path to profitability in the early adoption markets on which we are focused. The profitability of our products depends largely on material and manufacturing costs and the market price of hydrogen. The hydrogen infrastructure that is needed to support our growth readiness and cost efficiency must be available and cost efficient. We must continue to shorten the cycles in our product roadmap with respect to improvement in product reliability and performance that our customers expect. We must execute on successful introduction of our products into the market. We must accurately evaluate our markets for, and react to, competitive threats in both other technologies (such as advanced batteries) and our technology field. Finally, we must continue to lower our products’ build costs and lifetime service costs. If we are unable to successfully take these steps, we may never operate profitably, and, even if we do achieve profitability, we may be unable to sustain or increase our profitability in the future.

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

At December 31, 2022, our total outstanding indebtedness was approximately \$532.2 million, 193.9 million of the \$200.0 in aggregate principal amount of 3.75% Convertible Senior Notes due June 1, 2025 (the “3.75% Convertible Senior Notes”), \$9.1 million of long-term debt, and \$329.2 million of finance obligations consisting primarily of debt associated with sale of future revenues and sale/leaseback financings.

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

- we may have difficulty satisfying our obligations with respect to our outstanding debt;
- we may have difficulty obtaining financing in the future for working capital, capital expenditures, acquisitions, or other purposes;
- our vulnerability to general economic downturns and adverse industry conditions could increase;
- our flexibility in planning for, or reacting to, changes in our business and in our industry in general could be limited;
- our amount of debt and the amount we must pay to service our debt obligations could place us at a competitive disadvantage compared to our competitors that may have less debt.

Our ability to generate cash to repay our indebtedness is subject to the performance of our business, as well as general economic, financial, competitive, and other factors that are beyond our control. If our business does not generate sufficient cash flow from operating activities or if future borrowings are not available to us in amounts sufficient to enable us to fund our liquidity needs, our operating results, and financial condition may be adversely affected.

The accounting method for convertible debt securities that may be settled in cash, such as the 3.75% Convertible Senior Notes, could have a material effect on our reported financial results.

Under Accounting Standards Codification (“ASC”) 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 the 3.75% 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. As a result, we report larger net losses (or lower net income) in our financial results because ASC 470-20 requires interest to include the amortization of the debt discount, which could adversely affect our reported or future financial results or the trading price of our common stock.

In addition, on January 1, 2021, we early adopted Accounting Standards Update (“ASU”) No. 2020-06, *Debt—Debt with Conversion and Other Options* (Subtopic 470-20) and *Derivatives and Hedging—Contracts in Entity’s Own Equity* (Subtopic 815-40) using the modified retrospective approach. Consequently, the 3.75% Convertible Senior Notes is now accounted for as a single liability measured at its amortized cost. This accounting change removed the impact of recognizing the equity component of the Company’s convertible notes at issuance and the subsequent accounting impact of additional interest expense from debt discount amortization. The cumulative effect of the accounting change upon adoption on January 1, 2021 increased the carrying amount of the 3.75% Convertible Senior Notes by \$120.6 million, reduced accumulated deficit by \$9.6 million and reduced additional paid-in capital by \$130.2 million. Future interest expense of the convertible notes will be lower as a result of adoption of this guidance and net loss per share will be computed using the if-converted method for convertible instruments.

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

In conjunction with the pricing of the 3.75% Convertible Senior Notes, the Company entered into privately negotiated capped call transactions (the “3.75% Notes Capped Call”) with certain counterparties at a price of \$16.3 million. The 3.75% Notes Capped Call cover, subject to anti-dilution adjustments, the aggregate number of shares of the Company’s common stock that underlie the initial 3.75% Convertible Senior Notes and is generally expected to reduce potential dilution to the Company’s common stock upon any conversion of the 3.75% Convertible Senior Notes and/or

offset any cash payments the Company is required to make in excess of the principal amount of the converted notes, as the case may be, with such reduction and/or offset subject to a cap based on the cap price. The cap price of the 3.75% Notes Capped Call is initially \$6.7560 per share, which represents a premium of approximately 60% over the last then-reported sale price of the Company's common stock of \$4.11 per share on the date of the transaction and is subject to certain adjustments under the terms of the 3.75% Notes Capped Call. The 3.75% Notes Capped Call becomes exercisable if the conversion option is exercised.

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 3.75% Convertible Senior Notes (and are likely to do so during any observation period related to a conversion of 3.75% Convertible Senior Notes or following any repurchase of 3.75% Convertible Senior Notes by us on any fundamental change repurchase date or otherwise). This activity could also cause or avoid an increase or a decrease in the market price of our common stock. In addition, if any such convertible note hedge transaction fails to become effective, the option counterparties may unwind their hedge positions with respect to our common stock, which could adversely affect the value of our common stock. The potential effect, if any, of these transactions and activities on the market price of our common stock will depend in part on market conditions and cannot be ascertained at this time. Any of these activities could adversely affect the value of our common stock.

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

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

C. OPERATIONAL RISKS

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

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

- expanding our existing customers and expanding to new markets;
- ensuring manufacture, delivery, and installation of our products;
- ensuring timely construction and completion of hydrogen generation projects, which may be delayed due to the Company's inexperience with these project types, supply chain issues, and federal, state, and local permitting and regulatory issues;
- implementing and improving additional and existing administrative, financial and operations systems and procedures and controls;
- integration of acquisitions;
- hiring additional employees;
- expanding and upgrading our technological capabilities;
- managing relationships with our customers and suppliers and strategic partnerships with other third parties;
- maintaining adequate liquidity and financial resources; and
- continuing to increase our revenues from operations.

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

satisfy customer requirements, execute our business plan, or respond to competitive pressures. For further information on risks associated with new business ventures, see Item 1.3.E, “Risk Factors” (“Strategic Risks — We may be unable to successfully pursue new business ventures.”).

Our success depends on our ability to improve our financial and operational performance and execute our business strategy.

If we fail to implement our business strategy, our financial condition and results of operations could be adversely affected. Our future financial performance and success depend in large part on our ability to successfully implement our business strategy. We cannot assure you that we will be able to successfully implement our business strategy or be able to continue improving our operating results. In particular, we cannot assure you that we will be able to successfully execute our ongoing, or any future, investments, achieve operating cost savings targeted through focused improvements and capacity optimization, including improvements to service performance through scale of manufacturing and vertical integration, and opportunistically pursue strategic transactions. Implementation of our business strategy may be impacted by factors outside of our control, including competition, commodity price fluctuations, industry, legal and regulatory changes or developments and general economic and political conditions. Any failure to successfully implement our business strategy could adversely affect our financial condition and results of operations. We may, in addition, decide to alter or discontinue certain aspects of our business strategy at any time.

Although we have undertaken and expect to continue to undertake productivity and manufacturing system and process transformation initiatives to improve service performance, we cannot assure you that all of these initiatives will be completed or that any estimated cost savings from such activities will be fully realized. Even when we are able to generate new efficiencies in the short- to medium-term, we may not be able to continue to reduce costs and increase productivity over the long-term. There can be no assurance if and when any of these initiatives will be successfully and fully executed or completed.

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

If we experience delays in meeting our development goals (including delivery of electrolyzers to customers, as well as the completion of hydrogen generation projects), 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 have a material adverse effect upon our future business.

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

Our products use, or generate, flammable fuels that are inherently dangerous substances, which could subject our business to product safety, product liability, other claims, product recalls, negative publicity, or heightened regulatory scrutiny of our products.

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. Our expansion into electrolyzer manufacturing, hydrogen production, and the transport of hydrogen fuel similarly involve hydrogen in either gaseous or liquified form. Additionally, the production of hydrogen through electrolysis also results in the generation of oxygen. As a result, oxygen must be separated and controlled during the hydrogen production process. Such activities are subject to potential risks and liabilities associated with flammable gases.

The risk of product liability claims and associated adverse publicity is inherent in the development, manufacturing, marketing and sale of fuel cell products, electrolyzers, hydrogen production and destruction, and in products fueled by hydrogen, which is a flammable gas. Any liability for damages resulting from malfunctions or design defects could be substantial and could materially adversely affect our business, financial condition, results of operations and prospects. In addition, an actual or perceived problem with our products could adversely affect the market's perception of our products resulting in a decline in demand for our products, which may materially and adversely affect our business, financial condition, results of operations and prospects. See Part I, Item 3, "Legal Proceedings."

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 the current and 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, we may from time to time 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. 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 purchase orders may not ship, be commissioned or installed, or convert to revenue, which could have an adverse impact on revenue and cash flow.

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 for our GenDrive products, shipments made against these orders have generally occurred between 90 days and 24 months from the date of acceptance of the order. Orders for the Company's products and services approximated \$1.2 billion for the year ended December 31, 2022. 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 disclose anticipated, pending orders with prospective customers for our various products, including PEM fuel cell, electrolyzer, and green hydrogen sales; however, those prospective customers may require certain conditions or contingencies to be satisfied prior to entering into a purchase order with us, some of which are outside of our control. Such conditions or contingencies that may be required to be satisfied before we receive a purchase order may include, but are not limited to, successful product demonstrations or field

trials. Converting orders into revenue is also dependent upon our customers' ability to obtain financing. Some conditions or contingencies that are out of our control may include, but are not limited to, government tax policy, government funding programs, and government incentive programs. Additionally, some conditions and contingencies may extend for several years. We may have to compensate customers, by either reimbursement, forfeiting portions of associated revenue, or other methods depending on the terms of the customer contract, based on the failure on any of these conditions or contingencies. While not probable, this could have an adverse impact on our revenue and cash flow.

We are dependent on information technology in our operations and the failure of such technology may adversely affect our business. Potential security breaches of our information technology systems, including cyber-attacks, could lead to liability or could damage our reputation and financial results.

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. Any systems failures could impede our ability to timely collect and report financial results in accordance with applicable laws.

Information technology system and/or network disruptions could harm the Company's operations. Failure to effectively prevent, detect, and recover from security breaches, including cyber-attacks, could result in the misuse of company assets, unauthorized use or publication of our trade secrets and confidential business information, disruption to the company, diversion of management resources, regulatory inquiries, legal claims or proceedings, reputational damage, loss of sales, reduction in value of our investment in research and development, among other costs to the company. We have experienced and may continue to experience attempts to gain unauthorized access to our information technology systems on which we maintain proprietary and confidential information. To date, any attempts to gain unauthorized access have been either immaterial or deflected by appropriate security measures. The risk of a security breach or disruption, particularly through cyber-attacks, or cyber intrusion, including by computer hackers, and cyber terrorists, has generally increased as cyber-attacks have become more prevalent and harder to detect and fight against. Additionally, outside parties may attempt to access our confidential information through other means, for example by fraudulently inducing our employees to disclose confidential information. We actively seek to prevent, detect, and investigate any unauthorized access. These threats are also continually evolving, and as a result, will become increasingly difficult to detect. In addition, as a result of the COVID-19 pandemic, the increased prevalence of employees working from home may exacerbate the aforementioned cybersecurity risks. Despite the implementation of network security measures, our information technology system have been and could be penetrated by outside parties.

The implementation of a new enterprise resource planning system could cause disruption to our operations.

We are planning to implement a new enterprise resource planning, or ERP, system which is currently scheduled to be implemented during fiscal year 2023. We may experience difficulties in implementing the new ERP system. If the implementation of the ERP system does not proceed as expected, it could impede our ability to manufacture products, order materials, generate management reports, invoice customers, and comply with laws and regulations. Any of these types of disruptions could have a material adverse effect on our net sales and profitability. In addition, the implementation of the new ERP system will require significant investment of human and financial resources. We may experience delays, increased costs and other difficulties, including potential design defects, miscalculations, testing requirements, re-work due to changes in business plans or reporting standards, and the diversion of management's attention from day-to-day business operations. Extended delays could include operational risk, including cybersecurity risks, and other complications. If we are unable to implement the new ERP system as planned, the effectiveness of our internal control over financial reporting could be adversely affected, our ability to assess those controls adequately could be delayed, and our business, results of operations, financial condition and cash flows could be negatively impacted.

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, and marketing and sales professionals. Our future success will depend, in part, on our ability to attract and retain qualified management and technical personnel. We do not know whether we will be successful in hiring or retaining qualified personnel. Furthermore, our ability to attract and retain key employees could be adversely impacted if we do not have a sufficient number of shares available under our equity incentive plan to issue to our employees, or if our stockholders do not approve requested share increases or a new equity incentive. In general, our

industry continues to experience change and be subject to significant competitive pressures with respect to the retention of top talent. The loss of key employees may occur due to perceived opportunity for promotion, compensation levels or composition of compensation, work environment or other individual reasons. In addition, we have from time-to-time experienced labor shortages and other labor-related issues. Labor shortages have become more pronounced as a result of the COVID-19 pandemic. A number of factors might adversely affect the labor force available to us in one or more of our markets, including high employment levels, federal unemployment subsidies, and other government regulations, which include laws and regulations related to workers' health and safety, wage and hour practices and immigration, and such factors can also impact the cost of labor. For example, the recently enacted Inflation Reduction Act includes certain prevailing wage requirements related to tax credit availability which may impact labor costs of the Company and our contractors and subcontractors going forward. An increase in labor costs and the unavailability of skilled labor (including apprentices) or increased turnover could have a material adverse effect on our results of operations. Our inability to hire qualified personnel on a timely basis, or the departure of key employees, could materially and adversely affect our development and profitable commercialization plans and, therefore, our business prospects, results of operations and financial condition.

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

PEM fuel cell technology was first developed in the 1950s, and fuel processing technology has been practiced on a large scale in the petrochemical industry for decades. Accordingly, we do not believe that we can establish a significant proprietary position in the fundamental component technologies in these areas. However, our ability to compete effectively will depend, in part, on our ability to protect our proprietary system-level technologies, systems designs and manufacturing processes. We rely on patents, trademarks, trade secrets, 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 USPTO 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.

Furthermore, we might encounter difficulties protecting intellectual property rights in foreign jurisdictions. Certain jurisdictions do not favor the enforcement of patents, trade secrets, and other intellectual property protection. Enforcement of our intellectual property and proprietary rights in foreign jurisdictions could result in substantial costs and adverse impacts to our intellectual property rights.

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

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

even if they are successful, are expensive to pursue and time consuming, and we could use a substantial amount of our management and financial resources in either case.

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

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

We are currently, and in the future may continue to be, subject to commercial disputes and litigation. In connection with any disputes or litigation in which we are involved, we may incur costs and expenses in connection with defending ourselves or in connection with the payment of any settlement or judgment or compliance with any ruling in connection therewith. The expense of defending litigation may be significant. The amount of time to resolve lawsuits is unpredictable and defending ourselves may divert management's attention from the day-to-day operations of our business, which could adversely affect our business, financial condition, results of operations and cash flows. In addition, an unfavorable outcome in any such litigation could have a material adverse effect on our business, results of operations, financial condition and cash flows. See Part I, Item 3, "Legal Proceedings."

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

U.S. Generally Accepted Accounting Principles ("GAAP") is subject to interpretation by the FASB, the American Institute of Certified Public Accountants, the SEC and various bodies formed to promulgate and interpret appropriate accounting principles. See Note 2, "Summary of Significant Accounting Policies," to our consolidated financial statements included in this Annual Report on Form 10-K regarding the effect of new accounting pronouncements on our financial statements. Any difficulties in implementing these pronouncements could cause us to fail to meet our financial reporting obligations, which could result in regulatory discipline and harm investors' confidence in us. Further, the implementation of new accounting pronouncements or a change in other principles or interpretations could have a significant effect on our financial results.

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

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

We identified material weaknesses in our internal control over financial reporting. If we do not effectively remediate these material weaknesses or if we otherwise fail to maintain effective internal control over financial reporting, we may not be able to accurately report our financial results or prevent fraud.

Management identified material weaknesses in our internal control over financial reporting as of December 31, 2022, 2021, 2020, 2019, and 2018. See Item 9A, "Controls and Procedures," in this Annual Report on Form 10-K for information regarding the identified material weaknesses and our actions to date to remediate the material weaknesses. If we do not effectively remediate these material weaknesses or if we otherwise fail to maintain effective internal control over financial reporting, we may not be able to accurately report our financial results or prevent fraud.

D. REGULATORY RISKS

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

We believe that the near-term growth of alternative energy technologies is affected by the availability and size of government and economic incentives. Many of these government incentives expire, phase out over time, may exhaust the allocated funding, or require renewal by the applicable authority. In addition, these incentive programs could be reduced or discontinued for other reasons. The Inflation Reduction Act (“IRA”) adopted in August 2022 contains a number of tax incentive provisions including: (i) an extension and amendment of the Section 48 investment tax credit (“ITC”) for projects that “begin construction” before 2025; (ii) a new Section 48E clean electricity ITC; (iii) a new Section 45V Clean Hydrogen Production Tax Credit (“PTC”); and (iv) a new commercial clean vehicle tax credit, among other items. In many instances, the Company will have to comply with prevailing wage and apprenticeship requirements to maximize the value of these new clean energy tax credits. Furthermore, the ITC also have bonus credits for projects that are placed in service in certain “energy community” regions (specifically former oil, coal, and gas dependent geographies, and brownfield), or for projects that can meet domestic content criteria for steel, iron, and manufactured products. For example, the baseline credit amount for the ITC for qualified fuel cell properties is six percent. If a taxpayer satisfied prevailing wage and apprenticeship requirements (or is exempt therefrom), the ITC amount is multiplied by five (equal to 30%). Furthermore, if a project is placed in service in an “energy community” or can meet “domestic content” criteria, the taxpayer may be eligible for additional bonus credits beyond a 30% ITC. We believe we are well positioned to capture incentives contained in the IRA; however, this legislation was adopted in August 2022, and forthcoming interagency guidance processes are still ongoing. We have not yet seen the impact these IRA-related incentives may have on our business and operations and cannot guarantee we will realize anticipated benefits of incentives under the IRA, particularly as our Company adapts to an ongoing and nascent regulatory guidance process regarding the detailed requirements of various new energy provisions. Furthermore, changes or amendments to clean energy tax credits might be more favorable to other technologies. Any reduction, elimination, or discriminatory application of expiration of the ITC or other government subsidies and economic incentives, or the failure to renew such tax credit, governmental subsidies, or economic incentives, may result in the diminished economic competitiveness of our products to our customers and could materially and adversely affect the growth of alternative energy technologies, including our products, as well as our future operating results and liquidity.

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

Our operations are subject to federal, state, and local environmental and human health and safety laws and regulations, including laws and regulations relating to the use, handling, storage, transportation, disposal and human exposure to hazardous substances and wastes, product safety, emissions of pollution into the environment, and human health and safety. We have incurred and expect to continue to incur, costs to comply with these laws and regulations. These costs and obligations are likely to expand and change as our Company grows, makes acquisitions, and conducts business in new locations. Furthermore, federal, state, and local governments are increasingly regulating and restricting the use of certain chemicals, substances, and materials. Some of these policy initiative could foreseeably be impactful to our business. For example, laws, regulations, or other policy initiatives might address substances found within component parts to our products, in which event our Company would be required to comply with such requirements.

Our facilities in the U.S. are subject to regulation by OSHA, which regulates the protection of the health and safety of workers. In addition, the OSHA hazard communication standard requires that we maintain information about hazardous materials used or produced in our operations and that we provide this information to employees, state and local governmental authorities and local residents. We are also subject to occupational safety regulations in other countries. Our failure to comply with government occupational safety regulations, including OSHA requirements, or general industry standards relating to employee health and safety, keep adequate records or monitor occupational exposure to regulated substances could expose us to liability, enforcement, and fines and penalties, and could have a material adverse effect on our business, operating results, cash flows, or financial condition. Violation of these laws or regulations or the occurrence of an explosion or other accident in connection with our fuel cell systems at our properties or at third party locations could lead to injuries, property damage, litigation, substantial liabilities and sanctions, including fines and penalties, cleanup costs, manufacturing delays or the requirement to undertake corrective action. Further, environmental laws and human health and safety and regulations, and the administration, interpretation, and enforcement thereof, are subject to change

and may become more stringent in the future, each of which could materially adversely affect our business, financial condition, and results of operations.

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

Our business may become subject to increased government regulation.

Our products are subject to certain federal, state, local, and non-U.S. laws and regulations, including, for example, state and local ordinances relating to building codes, fire codes, public safety, electrical and gas pipeline connections, hydrogen transportation and siting and related matters. See Item 1, “Business — Government Regulations” for additional information. In certain jurisdictions, these regulatory requirements may be more stringent than those in the United States. Further, as products are introduced into the market commercially, governments may impose new regulations. We do not know the extent to which any such regulations may impact our ability to manufacture, distribute, install and service our products. Any regulation of our products, whether at the federal, state, local or foreign level, including any regulations relating to the production, operation, installation, and servicing of our products may increase our costs and the price of our products, and noncompliance with applicable laws and regulations could subject us to investigations, sanctions, enforcement actions, fines, damages, civil and criminal penalties, or injunctions. Furthermore, certain business activities may require the Company to navigate a myriad of state or local-level laws and regulations. If any governmental sanctions are imposed, our business, operating results, and financial condition could be materially adversely affected. In addition, responding to any action will likely result in a significant diversion of management’s attention and resources and an increase in professional fees. Enforcement actions and sanctions could harm our business, operating results and financial condition.

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

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

In addition, as our business grows, we are required to comply with increasingly complex taxation rules and practices. We are subject to tax in multiple U.S. tax jurisdictions and in foreign tax jurisdictions as we expand internationally, which requires additional expertise to ensure compliance with various domestic and international tax laws. The development of our global tax footprint and compliance with these laws may impact how we conduct our business and affect our financial position, operating results, and cash flows.

The changes in the carryforward/carryback periods as well as the new limitation on use of net operating losses (“NOLs”) may significantly impact our valuation allowance assessments for NOLs.

Changes in U.S. federal income or other tax laws or the interpretation of tax laws, including the Inflation Reduction Act, as passed by Congress in August 2022, may impact our tax liabilities. As of December 31, 2022, we had federal NOL carryforwards of \$1.4 billion, which begin to expire in various amounts and at various dates in 2034 through 2037 (other than federal NOL carryforwards generated after December 31, 2017, which are not subject to expiration). As of December 31, 2022, we also had federal research and development tax credit carryforwards of \$14.9 million, which begin to expire in 2033. Utilization of our NOLs and research and development tax credit carryforwards may be subject

to a substantial annual limitation if the ownership change limitations under Sections 382 and 383 of the Internal Revenue Code of 1986, as amended (the “Code”), and similar state provisions are triggered by changes in our ownership. In general, an ownership change occurs if there is a cumulative change in the ownership of the Company by “5-percent shareholders” that exceed 50 percentage points over a rolling three-year period. Based on studies of the changes in ownership of the Company, it has been determined that a Section 382 ownership change occurred in 2013 that limited the amount of pre-change NOLs that can be used in future years. NOLs incurred after the most recent ownership change are not subject to Section 382 of the Code and are available for use in future years. If we undergo any ownership changes, our ability to utilize our NOL carryforwards or research and development tax credit carryforwards could be further limited by Sections 382 and 383 of the Code. In addition, future changes in our stock ownership, many of which are outside of our control, could result in an ownership change under Sections 382 and 383 of the Code. Any such limitation may significantly reduce our ability to utilize our NOL carryforwards and research and development tax credit carryforwards before they expire. Our NOL carryforwards and research and development tax credit carryforwards may also be impaired under state law. Accordingly, we may not be able to utilize a material portion of our NOL carryforwards or research and development tax credit carryforwards.

The Coronavirus Aid, Relief and Economic Security Act modified, among other things, rules governing NOLs. NOLs arising in tax years beginning after December 31, 2017 are subject to an 80% of taxable income limitation (as calculated before taking the NOLs into account) for tax years beginning after December 31, 2020. In addition, NOLs arising in tax years 2018, 2019, and 2020 are subject to a five year carryback and indefinite carryforward, while NOLs arising in tax years beginning after December 31, 2020 also are subject to indefinite carryforward but cannot be carried back. In future years, if and when the valuation allowance related to our NOLs is partially or fully released, the changes in the carryforward/carryback periods as well as the new limitation on use of NOLs may significantly impact our valuation allowance assessments for NOLs generated after December 31, 2017.

Trade policies, treaties, and tariffs could have a material adverse effect on our business.

Our business is dependent on the availability of raw materials and components for our products, particularly electrical components common in the semiconductor industry. There is continued uncertainty about the future relationship between the United States and various other countries, most significantly China, with respect to trade policies, treaties, tariffs, and taxes. Under the Biden administration, changes in U.S. administrative policy could lead to changes in existing trade agreements, greater restrictions on free trade generally, and significant increases in tariffs on goods imported into the United States, particularly tariffs on products manufactures in China and Mexico, among other possible changes. These developments, or the perception that any of them could occur, could have a material effect on global economic conditions and the stability of global financial markets, and could significantly reduce global trade and, in particular, trade between the impacted nations and the United States.

This uncertainty includes: (i) the possibility of altering the existing tariffs or penalties on products manufactured outside the United States, including the U.S. government’s 25% tariff on a range of products from China; (ii) the effects stemming from the removal of such previously imposed tariffs; (iii) subsequent tariffs imposed by the United States on any other U.S. trading partners such as Russia; and (iv) potential tariffs imposed by trading partners on U.S. goods. The institution of trade tariffs on items imported by us from other countries could increase our costs, which could have a negative impact on our business.

We cannot predict whether, and to what extent, there may be changes to international trade agreements or whether quotas, duties, tariffs, exchange controls or other restrictions on our products will be changed or imposed. In addition, an open conflict or war across any region could affect our ability to obtain raw materials. For example, the current military conflict between Russia and Ukraine, and related sanctions, export controls or other actions that may be initiated by nations, including the United States, the European Union or Russia (e.g., potential cyberattacks, disruption of energy flows, etc.) or potential sanctions or relevant export controls related to China or Taiwan could adversely affect our business and/or our supply chain or our business partners or customers in other countries beyond Russia and Ukraine. Although we currently maintain alternative sources for raw materials, if we are unable to source our products from the countries where we wish to purchase them, either because of the occurrence or threat of wars or other conflicts, regulatory changes or for any other reason, or if the cost of doing so increases, it could have a material adverse effect on our business, financial condition and results of operations. 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 have a material adverse effect on our business and our results of operations.

We are exposed to fluctuations in currency exchange rates, which could negatively affect our operating results.

Our contracts are primarily denominated in U.S. dollars, and therefore substantially all of our revenue is not subject to foreign currency risk. However, a strengthening of the U.S. dollar could increase the real cost of our offerings to our customers outside of the United States, which could adversely affect our operating results. In addition, an increasing portion of our operating revenues and operating expenses are earned or incurred outside of the United States, and an increasing portion of our assets is held outside of the United States. These operating revenues, expenses, and assets are denominated in foreign currencies and are subject to fluctuations due to changes in foreign currency exchange rates. If we are not able to successfully hedge against the risks associated with currency fluctuations, our operating results could be adversely affected.

Additionally, global events as well as geopolitical developments, including regional conflicts in Europe, fluctuating commodity prices, trade tariff developments, and inflation have caused, and may in the future cause, global economic uncertainty and uncertainty about the interest rate environment, which could amplify the volatility of currency fluctuations. We have not engaged in the hedging of foreign currency transactions to date, so we may not be able to effectively offset the adverse financial impacts that may result from unfavorable movements in foreign currency exchange rates, which could adversely affect our operating results.

E. STRATEGIC RISKS

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

We will need to maintain and may need to enter into additional strategic relationships in order to complete our current product development and commercialization plans regarding our fuel cell products, electrolyzers, hydrogen production, and potential new business markets. 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, negotiate, 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.

We may be unable to make attractive acquisitions or successfully integrate acquired businesses, assets or properties, and any inability to do so may disrupt our business and hinder our ability to grow, 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. We may not be able to identify such attractive acquisition opportunities. Acquisitions, involve numerous risks, any of which could harm our business, including, among other things:

- difficulty in integrating the technologies, products, operations, and existing contracts of a target company and realizing the anticipated benefits of the combined businesses;
- mistaken assumptions about volumes or the timing of those volumes, revenues or costs, including synergies;
- negative perception of the acquisition by customers, financial markets or investors;
- difficulty in supporting and transitioning customers, if any, of the target company;
- inability to achieve anticipated synergies or increase the revenue and profit of the acquired business;
- the assumption of unknown liabilities;

- exposure to potential lawsuits;
- limitations on rights to indemnity from the seller;
- the diversion of management's and employees' attention from other business concerns;
- unforeseen difficulties operating in new geographic areas;
- customer or key employee losses at the acquired businesses;
- the price we pay or other resources that we devote may exceed the value we realize; or
- the value we could have realized if we had allocated the purchase price or other resources to another opportunity and inability to generate sufficient revenue to offset acquisition costs.

In addition, if we finance acquisitions by issuing equity securities, our existing stockholders may be diluted. As a result, if our forecasted assumptions for these acquisitions and investments are not accurate, we may not achieve the anticipated benefits of any such acquisitions, and we may incur costs in excess of what we had anticipated.

We may be unable to successfully pursue, integrate, or execute upon our new business ventures.

We are developing and constructing hydrogen production plants across the United States and building relationships with green hydrogen suppliers. In 2022 and 2021, we acquired two subsidiaries of Cryogenic Industrial Solutions, LLC, which are Alloy Custom Products, LLC and WesMor Cryogenics, LLC (collectively, "CIS"), as well as the entities Joule, Applied Cryo Technologies, and Frames Holding B.V. ("Frames"). There can be no assurances that we will be able to successfully implement our new business ventures or successfully operate within this industry.

The execution of the Company's vertical integration strategy, as well as scaling its manufacturing capabilities, is impactful to the performance of the Company and customer experience. Failure to improve overall service performance and scale sourcing effectively can limit growth and adversely impact our customer experience. Each aspect of this vertical integration strategy, including manufacturing of electrolyzers, mobility fuel cell products, stationary fuel cell products, and liquefaction equipment, as well as servicing customer sites, is dependent upon the Company's ability to integrate and execute these new business ventures. This vertical integration strategy may be unsuccessful, or the Company may be unable to successfully or timely execute its vertical integration strategy, which may adversely impact customer experience and, in turn, the Company's operations, business, or financial results.

Additionally, the ability to successfully integrate and execute these projects is dependent upon our ability to manufacture and supply each project with a sufficient number of electrolyzers. The successful integration of our electrolyzer manufacturing objectives will affect our ability to meet demands for electrolyzers — both internally for our hydrogen production projects, and externally for third-party electrolyzer customers. Furthermore, we may expend substantial time and resources in research and development for new potential markets. There is no guarantee that these research and development initiatives will be successful or implemented as commercial products. For further information on risks associated with acquisitions, see Item 1.3.F "Risk Factors ("Strategic Risks — We may be unable to make attractive acquisitions or successfully integrate acquired businesses, assets or properties, and any inability to do so may disrupt our business and hinder our ability to grow, divert the attention of key personnel, disrupt our business and impair our financial results.").

F. RISKS RELATED TO THE OWNERSHIP OF OUR COMMON STOCK

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

The market price of our common stock has historically experienced and may continue to experience significant volatility. In 2022, the sales price of our common stock fluctuated from a high of \$32.05 per share to a low of \$11.49 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, events relating to our determination to restate certain of our previously issued consolidated financial statements, 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. Furthermore, technical factors in the public trading market for our common stock may produce price movements that may or may not comport with macro, industry or company-specific fundamentals, including, without limitation, the sentiment of retail investors (including as may be expressed on financial trading and other social media sites), the amount and status of short interest in our securities, access to margin debt, trading in options and other derivatives on our common stock and any related hedging or other technical trading factors. In addition, we are subject to securities class action litigation filed after a drop in the price in our common stock in March 2021, which could result in substantial costs and diversion of management's attention and resources and could harm our stock price, business, prospects, results of operations and financial condition.

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

Sales of a substantial number of shares of our common stock in the public market, or the perception that such sales could occur, could adversely affect the market price of our common stock and may make it more difficult for you to sell your common stock at a time and price that you deem appropriate. As of December 31, 2022, there were approximately 39,170,766 shares of common stock issuable upon conversion of the 3.75% Convertible Senior Notes at a conversion price of \$5.03 per share. In addition, as of December 31, 2022, we had outstanding options exercisable for an aggregate of 8,052,969 shares of common stock at a weighted average exercise price of \$11.61 per share and 88,774,725 shares of common stock issuable upon the exercise of warrants, of which 46,131,376 were vested as of December 31, 2022.

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

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

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

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

Our amended and restated certificate of incorporation, our amended and restated bylaws, and Delaware corporate law contain provisions that could have an anti-takeover effect and make it harder for a third party to acquire us without the consent of our Board. These provisions may also discourage proxy contests and make it more difficult for our stockholders to take some corporate actions, including the election of directors. These provisions include, but are not limited to: the ability of our Board to issue shares of preferred stock in one or more series and to determine the terms of those shares, including preference and voting rights, without a stockholder vote; the exclusive right of our Board to elect a director to fill a vacancy created by the expansion of our Board or the resignation, death or removal of a director, which prevents stockholders from being able to fill vacancies on our Board; the inability of stockholders to call a special meeting of stockholders; the prohibition on stockholder action by written consent, which forces stockholder action to be taken at an annual or special meeting of our stockholders; advance notice informational and procedural requirements for nominations for election to our Board or for proposing business to be brought before a stockholder meeting, which may discourage or deter a potential acquirer from conducting a solicitation of proxies to elect the acquirer's own slate of directors or otherwise attempting to obtain control of us; a prohibition against stockholders nominating a number of their own nominees at the annual meeting of the stockholders that exceeds the number of directors to be elected at such annual meeting; the ability of our Board of Directors, by majority vote and without shareholder approval, to amend the bylaws, which may allow our Board to take additional actions to prevent an unsolicited takeover and inhibit the ability of an

acquirer to amend the bylaws to facilitate an unsolicited takeover attempt; and staggered terms for our directors, which effectively prevents stockholders from electing a majority of the directors at any one annual meeting of stockholders.

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

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

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

Our amended and restated bylaws provide for an exclusive forum in the Court of Chancery of the State of Delaware for certain disputes between us and our stockholders, and the exclusive forum in the Delaware federal courts for the resolution of any complaint asserting a cause of action under the Securities Act, which may limit a stockholder's ability to bring a claim in a forum a stockholder finds favorable.

Our amended and restated bylaws provide that unless the Company consents in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware will be the sole and exclusive forum for any state law claims for: (i) any derivative action or proceeding brought on behalf of the Company, (ii) any action asserting a claim of, or a claim based on, a breach of a fiduciary duty owed by any director, officer or other employee of the Company to the Company or the Company's stockholders, (iii) any action asserting a claim arising pursuant to any provision of the Delaware General Corporation Law or the Company's amended and restated certificate of incorporation or amended and restated bylaws, or (iv) any other action asserting a claim governed by the internal affairs doctrine. The amended and restated bylaws further provide that unless the Company consents in writing to the selection of an alternative forum, the federal district courts of the United States of America will be the sole and exclusive forum for the resolution of any complaint asserting a cause of action arising under the Securities Act and any person or entity purchasing or otherwise acquiring or holding any interest in shares of capital stock of the Company will be deemed to have notice of and consented to these provisions.

We believe these provisions may benefit us by providing increased consistency in the application of Delaware law and federal securities laws by chancellors and judges, as applicable, particularly experienced in resolving corporate disputes, efficient administration of cases on a more expedited schedule relative to other forums and protection against the burdens of multi-forum litigation. If a court were to find the choice of forum provision that is contained in our amended and restated bylaws to be inapplicable or unenforceable in an action, we may incur additional costs associated with resolving such action in other jurisdictions, which could materially adversely affect our business, results of operations, and financial condition. For example, Section 22 of the Securities Act provides that state and federal courts have concurrent jurisdiction over claims to enforce any duty or liability created by the Securities Act or the rules and regulations promulgated thereunder. Accordingly, there is uncertainty as to whether a court would enforce such a forum selection provision as written in connection with claims arising under the Securities Act.

Because the choice of forum provisions in our amended and restated bylaws may have the effect of severing certain causes of action between federal and state courts, stockholders seeking to assert claims against us or any of our current or former director, officer, other employee, agent, or stockholder, may be discouraged from bringing such claims due to a possibility of increased litigation expenses arising from litigating multiple related claims in two separate courts. The choice of forum provisions may therefore limit a stockholder's ability to bring a claim in a judicial forum that it finds favorable for disputes with us or any of our current or former director, officer, other employee, agent, or stockholder. Alternatively, if a court were to find the choice of forum provisions contained in our amended and restated bylaws to be inapplicable or unenforceable in an action, we may incur additional costs associated with resolving such action in other jurisdictions, which could harm our business, results of operations, and financial condition.

Climate change and climate change policies might affect our business, our industry, and the global economy.

We acknowledge the significant challenge presented by climate change, and see our transformational work in developing cost-effective, clean, renewable green hydrogen, and fuel cell energy as part of the solution. Our commitment to sustainability is deeply rooted in our products, mission, core values, and people. However, we acknowledge that climate change will potentially have wide-ranging impacts, including potential impacts to our Company. Unanticipated environmental, societal, economic, or geopolitical effects of climate change might affect business operations. For example, increasingly severe and frequent weather events might disrupt our supply chain or adversely affect our customers. Relatedly, government policies addressing climate change could similarly impact our business operations. We believe that many of these policies will be favorable for our fuel cell systems and hydrogen solutions. However, there is no guarantee that such potential changes in laws, regulations, or policies will be favorable to our Company, to existing or future customers, or to large-scale economic, environmental, or geopolitical conditions. We are firm believers that our fuel cell and hydrogen solutions along with our green hydrogen strategy will play a significant role in helping to get to the scale needed to help stop the substantial damage that may otherwise occur due to the future risks of climate change. Given the global nature of climate change, we all share the responsibility of developing or supporting new methods for generating and using energy that will curb or offset greenhouse gas emissions.

Item 1B. Unresolved Staff Comments

Not applicable.

Item 2. Properties

The following table sets forth information regarding our principal operating properties and other significant properties as of December 31, 2022, which we use of our single operating segment. In general, our operating properties are well maintained, suitably equipped, and in good operating condition:

Continent	Location	Facility	Size	Ownership Status
North America				
	New York			
	Latham	Manufacturing and R&D	159,000 sq ft	Lease
	Rochester	Manufacturing, R&D, & office	150,000 sq ft	Lease
	Latham	Manufacturing and warehousing	27,000 sq ft	Lease
	Latham - 8BA	Corporate offices	51,438 sq ft	Lease
	Latham - 6BA	Office	19,100 sq ft	Lease
	Slingerlands	Manufacturing and warehousing	350,000 sq ft	Lease
	Washington			
	Spokane	Manufacturing	29,200 sq ft	Lease
	Massachusetts			
	Concord	Manufacturing	33,000 sq ft	Lease
	Ohio			
	Dayton	Service center	37,000 sq ft	Lease
	Illinois			
	Romeoville	Service center	13,000 sq ft	Lease
	Pennsylvania			
	Canonsburg	Office	7,600 sq ft	Lease
	Texas			
	Houston	Manufacturing and office	175,000 sq ft	Lease
	Magnolia	Manufacturing and office	73,000 sq ft	Lease
	Indiana			
	LaFayette	Manufacturing and office	123,000 sq ft	Own
Europe				
	Netherlands			
	Alphen aan den Rijn	Office	30,000 sq ft	Lease
	Germany			
	Duisburg	Office	47,258 sq ft	Lease
Asia				
	India			
	Shivajinagar	Office	35,000 sq ft	Lease

See Note 21, “Commitments and Contingencies,” to the consolidated financial statements, Part II, Item 8, Financial Statements and Supplementary Data,” of this Annual Report on Form 10-K for further discussion of the leases. We believe that our facilities are sufficient to accommodate our anticipated production volumes for at least the next two years.

Item 3. Legal Proceedings

As previously disclosed, several actions were filed in the U.S. District Courts for the Southern District of New York and for the Central District of California asserting claims under the federal securities laws against the Company and two of its senior officers, Mr. Marsh and Mr. Middleton. On July 22, 2021, the court consolidated those actions into *In re Plug Power, Inc. Securities Litigation*, No. 1:21-cv-2004, pending in the U.S. District Court for the Southern District of New York (the “Securities Action”) and appointed a lead plaintiff. On October 6, 2021, lead plaintiff filed a consolidated amended complaint asserting claims on behalf of a putative class composed of all persons who purchased or otherwise acquired the Company’s securities between November 9, 2020 and March 16, 2021 (the “Amended Complaint”). The Amended Complaint asserted a claim against all defendants for alleged violations of Section 10(b) of the Securities Exchange Act of 1934 (the “Exchange Act”) and Rule 10b-5 promulgated thereunder and a claim under Section 20(a) of the Exchange Act against Mr. Marsh and Mr. Middleton as alleged controlling persons. The Amended Complaint alleged that defendants made “materially false” statements concerning (1) adjusted EBITDA; (2) fuel delivery and research and development expenses; (3) costs related to provision for loss contracts; (4) gross losses; and (5) the effectiveness of internal controls and procedures (the “accounting-related statements”), and that these alleged misstatements caused losses and damages for members of the alleged class. On December 6, 2021, defendants filed a motion to dismiss the Amended Complaint. In an opinion and order entered on September 29, 2022, the court granted defendants’ motion to dismiss the Amended Complaint in its entirety but permitted the lead plaintiff to further amend the complaint. On November 21, 2022, the lead plaintiff filed a second amended complaint purporting to assert claims under the same provisions against the same defendants on behalf of the same alleged class of purchasers of the Company’s securities (the “Second Amended Complaint”). The Second Amended Complaint largely repeated the allegations in the Amended Complaint but, in addition, alleged that various public statements during the alleged class period were false or misleading because they allegedly failed to disclose the status of discussions and considerations relating to warrants to purchase the Company’s common stock that were granted to a customer in connection with a commercial agreement. The defendants filed a motion to dismiss the Second Amended Complaint in its entirety on January 12, 2023.

On March 31, 2021, Junwei Liu, an alleged Company stockholder, derivatively and on behalf of nominal defendant Plug, filed a complaint in the U.S. District Court for the Southern District of New York against certain Company directors and officers (the “Derivative Defendants”), captioned *Liu v. Marsh et al.*, Case No. 1:21-cv-02753 (S.D.N.Y.) (the “Liu Derivative Complaint”). The Liu Derivative Complaint alleges that, between November 9, 2020 and March 1, 2021, the Derivative Defendants “made, or caused the Company to make, materially false and misleading statements concerning Plug Power’s business, operations, and prospects” by “issu[ing] positive financial information and optimistic guidance, and made assurances that the Company’s internal controls were effective,” when, “[i]n reality, the Company’s internal controls suffered from material deficiencies that rendered them ineffective.” The Liu Derivative Complaint asserts claims for (1) breach of fiduciary duties, (2) unjust enrichment, (3) abuse of control, (4) gross mismanagement, (5) waste of corporate assets, and (6) contribution under Sections 10(b) and 21D of the Exchange Act (as to the named officer defendants). The Liu Derivative Complaint seeks a judgment “[d]eclaring that Plaintiff may maintain this action on behalf of Plug”; “[d]eclaring that the [Derivative] Defendants have breached and/or aided and abetted the breach of their fiduciary duties”; “awarding to Plug Power the damages sustained by it as a result of the violations” set forth in the Liu Derivative Complaint, “together with pre-judgment and post-judgment interest thereon”; “[d]irecting Plug Power and the [Derivative] Defendants to take all necessary actions to reform and improve Plug Power’s corporate governance and internal procedures to comply with applicable laws”; and “[a]warding Plaintiff the costs and disbursements of this action, including reasonable attorneys’ and experts’ fees, costs, and expenses”; and “[s]uch other and further relief as the [c]ourt may deem just and proper.”

On April 5, 2021, alleged Company stockholders Elias Levy and Cameroohn X. Withers, derivatively and on behalf of nominal defendant Plug, filed a complaint in the U.S. District Court for the Southern District of New York against the Derivative Defendants named in the Liu Derivative Complaint, captioned *Levy et al. v. McNamee et al.*, Case No. 1:21-cv-02891 (S.D.N.Y.) (the “Levy Derivative Complaint”). The Levy Derivative Complaint alleges that, from November 9, 2020 to April 5, 2021, the Derivative Defendants “breached their duties of loyalty and good faith” by failing to disclose “(1) that the Company would be unable to timely file its 2020 annual report due to delays related to the review of classification of certain costs and the recoverability of the right to use assets with certain leases; (2) that the Company

was reasonably likely to report material weaknesses in its internal control over financial reporting; and (3) that, as a result of the foregoing, Defendants' positive statements about the Company's business, operations, and prospects were materially misleading and/or lacked a reasonable basis." The Levy Derivative Complaint asserts claims for (1) breach of fiduciary duty (as to the named director defendants), (2) unjust enrichment (as to certain named director defendants), (3) waste of corporate assets (as to the named director defendants), and (4) violations of Sections 10(b) and 21D of the Exchange Act (as to the named officer defendants). The Levy Derivative Complaint seeks a judgment "declaring that Plaintiffs may maintain this action on behalf of the Company"; finding the Derivative Defendants "liable for breaching their fiduciary duties owed to the Company"; directing the Derivative Defendants "to take all necessary actions to reform and improve the Company's corporate governance, risk management, and internal operating procedures to comply with applicable laws"; "awarding damages to the Company for the harm the Company suffered as a result of Defendants' wrongful conduct"; "awarding damages to the Company for [the named officer Derivative Defendants'] violations of Sections 10(b) and 21D of the Exchange Act"; "awarding Plaintiffs the costs and disbursements of this action, including attorneys', accountants', and experts' fees"; and "awarding such other and further relief as is just and equitable." The Liu Derivative Complaint and the Levy Derivative Complaint have been consolidated in *In re Plug Power Derivative Litigation*, Lead Case No. 1:21-cv-02753-ER and, by stipulation approved by the Court, the cases have been stayed pending the resolution of the motion to dismiss in the Securities Action.

On May 13, 2021, alleged Company stockholder Romario St. Clair, derivatively and on behalf of nominal defendant Plug, filed a complaint in the Supreme Court of the State of New York, County of New York against the Derivative Defendants named in the Liu Derivative Complaint, captioned *St. Clair v. Plug Power Inc. et al.*, Index No. 653167/2021 (N.Y. Sup. Ct., N.Y. Cty.) (the "St. Clair Derivative Complaint"). The St. Clair Derivative Complaint alleges that, for approximately two years from March 13, 2019 onwards, the company made a number of improper statements that "failed to disclose and misrepresented the following material, adverse facts, which the [derivative] defendants knew, consciously disregarded, or were reckless in not knowing", including: "(a) that the Company was experiencing known but undisclosed material weaknesses in its internal controls over financial reporting; (b) the Company was overstating the carrying amount of certain right of use assets and finance obligations associated with leases; (c) the Company was understating its loss accrual on certain service contracts; (d) the Company would need to take impairment charges relating to certain long-lived assets; (e) the Company was improperly classifying research and development costs versus costs of goods sold; and (f) the Company would be unable to file its annual Report for the 2020 fiscal year due to these errors." The St. Clair Derivative Complaint asserts claims for (1) breach of fiduciary and (2) unjust enrichment. The St. Clair Derivative Complaint seeks a judgment "for the amount of damages sustained by the Company as a result of the defendants' breaches of fiduciary duties and unjust enrichment"; "[d]irecting Plug Power to take all necessary actions to reform and improve its corporate governance and internal procedures to comply with applicable laws"; "[e]xtraordinary equitable and/or injunctive relief as permitted by law, equity, and state statutory provisions"; "[a]warding to Plug Power restitution from defendants, and each of them, and ordering disgorgement of all profits, benefits, and other compensation obtained by the defendants"; "[a]warding to plaintiff the costs and disbursements of the action, including reasonable attorneys' fees, accountants' and experts' fees, costs, and expenses"; and "[g]ranteeing such other and further relief as the [c]ourt deems just and proper." By stipulation approved by the Court, the case has been stayed pending the resolution of the motion to dismiss in the Securities Action.

On June 13, 2022, alleged Company stockholder Donna Max, derivatively on behalf of the Company as nominal defendant, filed a complaint in the United States District Court for the District of Delaware against the Derivative Defendants named in the Liu Derivative Complaint, captioned *Max v. Marsh, et. al.*, case no. 1:22-cv-00781 (D. Del.) (the "Max Derivative Complaint"). The Max Derivative Complaint alleges that, for the years 2018, 2019 and 2020, the defendants did not "assure that a reliable system of financial controls was in place and functioning effectively"; "failed to disclose errors in the Company's accounting primarily relating to (i) the reported book value of right of use assets and related finance obligations, (ii) loss accruals for certain service contracts, (iii) the impairment of certain long-lived assets, and (iv) the classification of certain expenses previously included in research and development costs"; and that certain defendants traded Company stock at "artificially inflated stock prices." The Max Derivative Complaint asserts claims for (1) breach of fiduciary against all defendants; (2) breach of fiduciary duty for insider trading against certain defendants; and (3) contribution under Sections 10(b) and 21D of the Exchange Act against certain defendants. The Max Derivative Complaint seeks an award "for the damages sustained by [the Company]" and related relief. By stipulation approved by the Court, the case has been stayed pending the resolution of the motion to dismiss in the Securities Action.

On June 29, 2022, alleged Company stockholder Abbas Khambati, derivatively on behalf of the Company as nominal defendant, filed a complaint in the Court of Chancery in the State of Delaware against the Derivative Defendants named in the Liu Derivative Complaint, *Mr. Conway and Mr. Schmid*, captioned *Khambati v. McNamee, et. al.*, C.A. no.

2022-05691 (Del. Ch.) (the “Khambati Derivative Complaint”). The Khambati Derivative Complaint alleges that the defendants “deceive[d] the investing public, including stockholders of Plug Power, regarding the Individual Defendants’ management of Plug Power’s operations and the Company’s compliance with the SEC’s accounting rules”; “facilitate[d] certain defendants’ sales of “their personally held shares while in possession of material, nonpublic information”; and “enhance[d] the Individual Defendants’ executive and directorial positions at Plug Power and the profits, power, and prestige that the Individual Defendants enjoyed as a result of holding these positions.” The Khambati Derivative Complaint asserts claims for (1) breach of fiduciary; and (2) disgorgement and unjust enrichment. The Khambati Derivative Complaint seeks an award “for the damages sustained by [the Company] as a result of the breaches” alleged or “disgorgement or restitution”; “disgorgement of insider trading profits” and “all profits, benefits and other compensation obtained by [defendants’] insider trading and further profits flowing therefrom”; an order “[d]irecting the Company to take all necessary actions to reform and improve its corporate governance and internal procedures”; and related relief.

On July 19, 2022, alleged Company stockholder Anne D. Graziano, as Trustee of the Anne D. Graziano Revocable Living Trust, derivatively on behalf of the Company as nominal defendant, filed a complaint in the Court of Chancery in the State of Delaware against the derivative defendants named in the Khambati Derivative Complaint, captioned *Graziano v. Marsh, et. al.*, C.A. no. 2022-0629 (Del. Ch.) (the “Graziano Derivative Complaint”). The Graziano Derivative Complaint alleges that the director defendants (i) “either knowingly or recklessly issued or caused the Company to issue the materially false and misleading statements” concerning “certain critical accounting issues”; (ii) “willfully ignored, or recklessly failed to inform themselves of, the obvious problems with the Company’s internal controls, practices, and procedures, and failed to make a good faith effort to correct the problems or prevent their recurrence”; (iii) the members of the Audit Committee failed “to prevent, correct, or inform the Board of the issuance of material misstatements and omissions regarding critical accounting issues and the adequacy of the Company’s internal controls”; (iv) “received payments, benefits, stock options, and other emoluments by virtue of their membership on the Board and their control of the Company”; (v) violated the Company’s Code of Conduct because they knowingly or recklessly engaged in and participated in making and/or causing the Company to make the materially false and misleading statements; and (vi) certain defendants “sold large amounts of Company stock while it was trading at artificially inflated prices.” The Graziano Derivative Complaint asserts claims for (1) breach of fiduciary; (2) breach of fiduciary duty against certain defendants for insider trading; (3) unjust enrichment; (4) aiding and abetting breach of fiduciary duty; and (5) waste of corporate assets. The Graziano Derivative Complaint seeks an award of “the amount of damages sustained by the Company”; seeks an order “[d]irecting Plug Power to take all necessary actions to reform and improve its corporate governance and internal procedures to comply with applicable laws and to protect Plug Power and its stockholders from a repeat of the damaging events described herein”; and related relief. The parties to the Graziano Derivative Complaint and Khambati Derivative Complaint have been consolidated in *In re Plug Power, Inc. Stockholder Derivative Litigation*, Consolidated C.A. No. 2022-0569 and, by stipulation approved by the Court, the cases have been stayed pending the resolution of the motion to dismiss in the Securities Action.

As previously disclosed, on August 28, 2018, a lawsuit was filed on behalf of multiple individuals against the Company and five corporate co-defendants in the 9th Judicial District Court, Rapides Parish, Louisiana. The lawsuit relates to the previously disclosed May 2018 accident involving a forklift powered by the Company’s fuel cell at a Procter & Gamble facility in Louisiana. The lawsuit alleges claims against the Company and co-defendants, including Structural Composites Industries, Deep South Equipment Co., Air Products and Chemicals, Inc., Westport Power, Inc., Quality Thermistor, Inc. and Hyster-Yale Group, Inc. for claims under the Louisiana Product Liability Act (“LPLA”) including defect in construction and/or composition, design defect, inadequate warning, breach of express warranty and negligence for wrongful death and personal injuries, among other damages. Procter & Gamble intervened in that suit to recover worker’s compensation benefits paid to or for the employees/dependents. In April 2022, Plug reached a settlement with respect to the individual plaintiffs on terms well below the Company’s commercial liability insurance limits.

Procter & Gamble also filed suit in the Louisiana 9th Judicial District Court for property damage, business interruption, loss of revenue, expenses, and other damages. Procter & Gamble alleges theories under the LPLA, breach of warranty and quasi-contractual claims under Louisiana law. Defendants include the Company and several of the same co-defendants from the August 2018 lawsuit, including Structural Composites Industries, Deep South Equipment Co., Hyster-Yale Group, Inc. and Westport Power, Inc.

The Company has filed a lawsuit against Structural Composites Industries, LLC, Worthington Industries, Inc. and Worthington Cylinder Corp. in the Supreme Court of Albany County, New York, related to the replacement of hydrogen storage tanks of the same model that was involved in the May 2018 accident at the Procter & Gamble facility in Louisiana. Structural Composites Industries, LLC, Worthington Industries, Inc. and Worthington Cylinder Corp. have filed a counterclaim suit, also arising out of the replacement of the tanks they manufactured.

The Company continues to vigorously litigate the remaining lawsuits against Procter & Gamble in Louisiana, and against Structural Composites Industries, LLC, Worthington Industries, Inc. and Worthington Cylinder Corp. in New York.

Item 4. Mine Safety Disclosures

Not applicable.

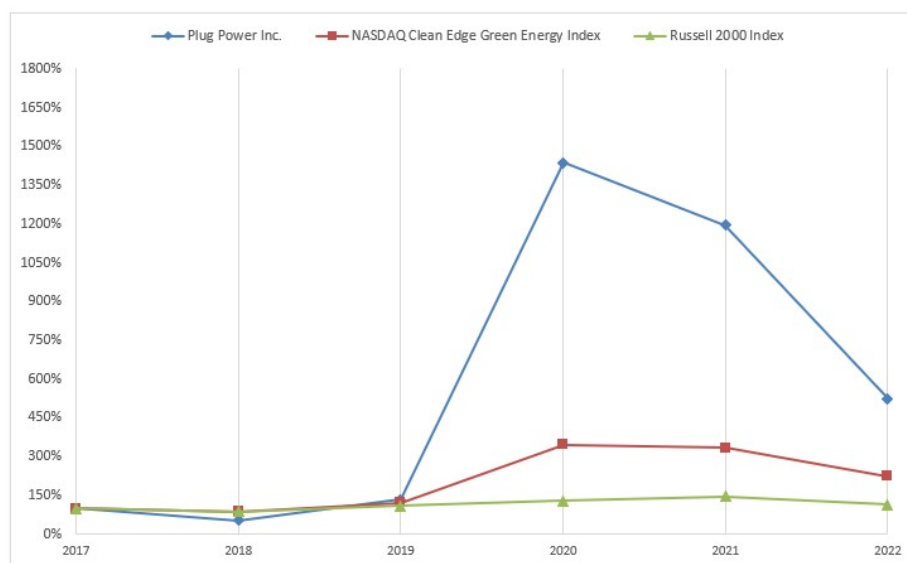
PART II

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

Market Information and Holders of Record. Our common stock is traded on the NASDAQ Capital Market under the symbol “PLUG.” As of February 17, 2023, there were approximately 814,679 record holders of our common stock. However, management believes that a significant number of shares are held by brokers in “street name” and that the number of beneficial stockholders of our common stock exceeds 901.

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 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 Index”) and the companies included within the Russell 2000 Index (“RUT Index”) for the period commencing December 31, 2017 and ending December 31, 2022. The calculation of the cumulative total return assumes a \$100 investment in the Company’s common stock, the CELS Index and the RUT Index on December 31, 2017 and the reinvestment of all dividends, if any.



Index	2017	2018	2019	2020	2021	2022
Plug Power Inc.	\$ 100.00	\$ 52.54	\$ 133.90	\$ 1,436.86	\$ 1,196.19	\$ 524.15
NASDAQ Clean Edge Green Energy Index	\$ 100.00	\$ 86.83	\$ 121.07	\$ 345.03	\$ 334.51	\$ 224.35
Russell 2000 Index	\$ 100.00	\$ 87.82	\$ 108.11	\$ 128.61	\$ 146.21	\$ 114.70

- This graph and the accompanying text are not “soliciting material,” are not deemed filed with the SEC and are not to be incorporated by reference in any filing by us under the Securities Act or the Exchange Act, whether made before or after the date hereof and irrespective of any general incorporation language in any such filing.
- The stock price performance shown on the graph is not necessarily indicative of future price performance.

- Assuming the investment of \$100 on December 31, 2017 and the reinvestment of dividends. The common stock price performance shown on the graph only reflects the change in our company's common stock price relative to the noted indices and is not necessarily indicative of future price performance.

Item 6. [Reserved]

Not applicable.

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 Annual Report on Form 10-K. In evaluating these statements, you should review Part I, Forward-Looking Statements, Part I, Item 1A, "Risk Factors" and our consolidated financial statements and notes thereto included in Part II, Item 8, "Financial Statements and Supplementary Data," of this Annual Report on Form 10-K.

Information pertaining to fiscal year 2020 was included in the Company's Annual Report on Form 10-K for the year ended December 31, 2020 on page 36 under Part II, Item 7, "Management's Discussion and Analysis of Financial Position and Results of Operations," which was filed with the SEC on May 14, 2021, as amended by the Amendment to the Annual Report on Form 10-K for the year ended December 31, 2020, which was filed with the SEC on March 14, 2022.

Overview

Plug is facilitating the paradigm shift to an increasingly electrified world by innovating cutting-edge hydrogen and fuel cell solutions.

While we continue to develop commercially viable hydrogen and fuel cell product solutions, we have expanded our offerings to support a variety of commercial operations that can be powered with green hydrogen. We provide electrolyzers that allow customers — such as refineries, producers of chemicals, steel, fertilizer and commercial refueling stations — to generate hydrogen on-site. We are focusing our efforts on (a) industrial mobility applications, including electric forklifts and electric industrial vehicles, at multi-shift high volume manufacturing and high throughput distribution sites where we believe our products and services provide a unique combination of productivity, flexibility, and environmental benefits; (b) stationary power systems that will support critical operations, such as data centers, microgrids, and generation facilities, in either a backup power or continuous power role and replace batteries, diesel generators or the grid for telecommunication logistics, transportation, and utility customers; and (c) production of hydrogen. Plug expects to support these products and customers with an ecosystem of vertically integrated products that produce, transport, store and handle, dispense, and use hydrogen for mobility and power applications.

Our current products and services include:

GenDrive: GenDrive is our hydrogen fueled Proton Exchange Membrane ("PEM") fuel cell system, providing power to material handling electric vehicles, including Class 1, 2, 3, and 6 electric forklifts, Automated Guided Vehicles ("AGVs"), and ground support equipment.

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

GenCare: GenCare is our ongoing "Internet of Things"-based maintenance and on-site service program for GenDrive fuel cell systems, GenSure fuel cell systems, GenFuel hydrogen storage and dispensing products and ProGen fuel cell engines.

GenSure: GenSure is our stationary fuel cell solution providing scalable, modular PEM fuel cell power to support the backup and grid-support power requirements of the telecommunications, transportation, and utility sectors; GenSure High Power Fuel Cell Platform will support large scale stationary power and data center markets.

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

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. This includes Plug’s membrane electrode assembly (“MEA”), a critical component of the fuel cell stack used in zero-emission fuel cell electric vehicle engines.

Liquefaction Systems: Plug’s 15 ton-per-day and 30 ton-per-day liquefiers are engineered for high efficiency, reliability, and operational flexibility — providing consistent liquid hydrogen to customers. This design increases plant reliability and availability while minimizing parasitic losses like heat leak and seal gas losses.

Electrolyzers: 5 and 10 MW electrolyzer systems that are modular, scalable hydrogen generators optimized for clean hydrogen production. Electrolyzers generate hydrogen from water using electricity and a special membrane and “green” hydrogen is generated by using renewable energy inputs, such as solar or wind power.

Cryogenic Equipment: Engineered equipment including trailers and mobile storage equipment for the distribution of liquified hydrogen, oxygen, argon, nitrogen and other cryogenic gases.

We provide our products and solutions worldwide through our direct sales force, and by leveraging relationships with original equipment manufacturers (“OEMs”) and their dealer networks. Plug is currently targeting Asia, Europe, Middle East, and North America for expansion in adoption. The European Union has rolled out ambitious targets for the hydrogen economy and Plug is seeking to execute on its strategy to become one of the European leaders in the hydrogen economy. This includes a targeted account strategy for material handling, securing strategic partnerships with European OEMs, energy companies, utility leaders, and accelerating our electrolyzer business. Our global strategy includes leveraging a network of integrators or contract manufacturers. We manufacture our commercially viable products in Latham, New York, Rochester, New York, Slingerlands, New York, Houston, Texas, and Spokane, Washington and support liquid hydrogen generation and logistics in Charleston, Tennessee.

Part of our long-term plan includes Plug penetrating the European and Asian hydrogen market, on-road vehicle market, and large-scale stationary market. Plug’s formation of joint ventures with HyVia and AccionaPlug S.L. in Europe and SK Plug Hyverse, in Asia not only support this goal but are expected to provide us with a more global footprint. Plug has been successful with acquisitions, strategic partnerships and joint ventures, and we plan to continue this mix.

COVID-19 Update

While we no longer enforce our prior COVID-19 policies with respect to weekly COVID-19 testing, face coverings, or daily COVID-19 questionnaires, we continue to monitor the COVID-19 pandemic and emerging variants, and remain prepared to adjust our policies and safety protocols in line with guidance from state and federal agencies. Employees are still expected to remain home if they are not feeling well and should contact our COVID team for future guidance. Furthermore, we have resumed all commercial air travel and all other non-critical travel, while also allowing employees to resume their personal travel. We have enabled third-party access to our facilities, and are continuing our normal janitorial and sanitary procedures. We are no longer requiring staggered shifts in our manufacturing facilities and are offering hybrid work schedules to those whose job function enables them to do so.

The COVID-19 pandemic has caused significant transportation challenges for global suppliers and we expect that these challenges will continue to have an impact on our businesses for the foreseeable future. We continue to take proactive steps to limit the impact of these challenges and are working closely with our suppliers and transportation vendors to ensure availability of products and implement other cost savings initiatives. In addition, we continue to invest in our supply chain to improve its resilience with a focus on automation, dual sourcing of critical components and localized manufacturing when feasible. To date, there has been limited disruption to the availability of our products related to COVID-19, although the Company has experienced supply chain-related delays for components of product lines and hydrogen generation projects. It is possible that more significant disruptions could occur if these supply chain challenges continue.

Strategic Investments

On December 5, 2022, the Company and its wholly-owned subsidiary Plug Power Hydrogen Holdings, Inc. simultaneously entered into a definitive agreement and closed on the acquisition of two subsidiaries of Cryogenic Industrial Solutions, LLC, which are Alloy Custom Products, LLC and WesMor Cryogenics, LLC. The purchase was approximately \$37.3 million, comprised of a mix of cash and the Company's common stock, to bolster the cryogenic tanker and storage tank business.

On January 14, 2022, Company and its wholly-owned subsidiary Plug Power Hydrogen Holdings, Inc. simultaneously entered into a definitive agreement and closed on the acquisition of Joule for a purchase price of approximately \$69.9 million, of which \$41.7 million will be based on future earnouts over the next four years. Joule is an engineered modular equipment, process design and procurement company founded in 2009 with a strong track record among the largest midstream, EPC, and oil & gas companies.

Inflation, Material Availability, and Labor Shortages

Throughout 2022, we continued to experience higher than expected commodity costs and supply chain costs, including logistics, procurement, manufacturing costs, energy and fuel costs, largely due to inflationary pressures. We expect this cost inflation to remain elevated through 2023.

Our operations require significant amounts of necessary parts and raw materials. From time to time, the Company has encountered difficulties in obtaining certain raw materials or components necessary for production due to supply chain constraints and logistical challenges, which has also negatively impacted the pricing of materials and components sourced or used by the Company. Increased energy costs have negatively impacted margins. Additionally, conflicts abroad, such as the Russia-Ukraine conflict, may potentially contribute to issues related to supply chain disruptions and inflation impacts. There have been supply chain and logistical challenges that have resulted in supply constraints and commodity price increases on certain raw materials, and components used by the Company in production, as well as increased prices for freight and logistics, including air, sea and ground freight. Consequently, the Company has experienced supply shortages for certain raw materials or components, which could be further exacerbated by increased commodity prices as a result of additional inflationary pressures. Although we have offset a portion of these increased costs through price increases and operational efficiencies to date, there can be no assurance that we will be able to continue to do so. If we are unable to manage fluctuations through pricing actions, cost savings projects, and sourcing decisions as well as through productivity improvements, it may adversely impact our gross margins in future periods.

Additionally, we have observed an increasingly competitive labor market. Tight labor markets have resulted in labor inflation and longer times to fill open positions. Increased employee turnover, changes in the availability of our workers, including as a result of COVID-19-related absences, and labor shortages in our supply chain have resulted in, and could continue to result in, increased costs which could negatively affect our financial condition, results of operations, or cash flows.

Results of Operations

Our primary sources of revenue are from sales of fuel cell systems, related infrastructure and equipment, services performed on fuel cell systems and related infrastructure, Power Purchase Agreements (PPAs), and fuel delivered to customers. A certain portion of our sales result from acquisitions in legacy markets, which we are working to transition to renewable solutions. Revenue from sales of fuel cell systems, related infrastructure and equipment represents sales of our GenDrive units, GenSure stationary backup power units, cryogenic stationary and on road storage, electrolyzers and 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.

Provision for Common Stock Warrants

On August 24, 2022, the Company and Amazon entered into the 2022 Transaction Agreement, under which the Company concurrently issued to Amazon.com NV Investment Holdings LLC, a wholly owned subsidiary of Amazon, the Amazon Warrant, to acquire the Amazon Warrant Shares, subject to certain vesting events described below. The Company

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and Amazon entered into the 2022 Transaction Agreement in connection with a concurrent commercial arrangement under which Amazon agreed to purchase hydrogen fuel from the Company through August 24, 2029.

In 2017, in separate transactions, the Company issued to each of Amazon.com NV Investment Holdings LLC and Walmart, Inc. (“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. For the third tranche of the shares under Walmart’s warrant, the exercise price will be determined once the second tranche vests. For the third tranche of the Amazon Warrant Shares, see below for the exercise price and measurement dates used.

The amount of provision for common stock warrants recorded as a reduction of revenue during the years ended December 31, 2022 and 2021 respectively, is shown in the table below (in thousands):

	Year Ended December 31,	
	2022	2021
Sales of fuel cell systems, related infrastructure and equipment	\$ (3,580)	\$ —
Services performed on fuel cell systems and related infrastructure	(1,003)	(497)
Power purchase agreements	(3,611)	(3,444)
Fuel delivered to customers	(4,489)	(2,625)
Total	<u>\$ (12,683)</u>	<u>\$ (6,566)</u>

Net revenue, cost of revenue, gross profit/(loss) and gross margin for the years ended December 31, 2022 and 2021 were as follows (in thousands):

	Net Revenue	Cost of Revenue	Gross Profit/(Loss)	Gross Margin
For the year ended December 31, 2022:				
Sales of fuel cell systems, related infrastructure and equipment	\$ 558,932	\$ 468,057	\$ 90,875	16.3 %
Services performed on fuel cell systems and related infrastructure	35,280	59,365	(24,085)	(68.3)%
Provision for loss contracts related to service	—	26,801	(26,801)	N/A
Power purchase agreements	47,183	144,696	(97,513)	(206.7)%
Fuel delivered to customers and related equipment	57,196	194,255	(137,059)	(239.6)%
Other	2,849	2,622	227	8.0 %
Total	<u>\$ 701,440</u>	<u>\$ 895,796</u>	<u>\$ (194,356)</u>	<u>(27.7)%</u>
For the year ended December 31, 2021:				
Sales of fuel cell systems, related infrastructure and equipment	\$ 392,777	\$ 307,157	\$ 85,620	21.8 %
Services performed on fuel cell systems and related infrastructure	26,706	63,729	(37,023)	(138.6)%
Provision for loss contracts related to service	—	71,988	(71,988)	N/A
Power purchase agreements	35,153	102,417	(67,264)	(191.3)%
Fuel delivered to customers and related equipment	46,917	127,196	(80,279)	(171.1)%
Other	789	1,165	(376)	(47.7)%
Total	<u>\$ 502,342</u>	<u>\$ 673,652</u>	<u>\$ (171,310)</u>	<u>(34.1)%</u>

Net Revenue

Revenue — sales of fuel cell systems, related infrastructure and equipment. Revenue from sales of fuel cell systems, related infrastructure and equipment represents sales of our GenDrive units, GenSure stationary backup power units, cryogenic stationary and on road storage, electrolyzers and hydrogen fueling infrastructure referred to at the site level as hydrogen installations. Revenue from sales of fuel cell systems, related infrastructure and equipment for the year ended December 31, 2022 increased \$166.2 million, or 42.3%, to \$558.9 million from \$392.8 million for the year ended December 31, 2021. The total revenue generated by Applied Cryo Technologies (“ACT”) and Frames was approximately \$141.0 million and \$15.8 million for the year ended December 31, 2022 and 2021, respectively. A certain portion of our sales of engineered equipment from legacy oil and gas orders are from the Frames acquisition and are not expected to continue beyond current commitments. The total revenue generated by Joule and CIS was approximately \$40.2 million for the year ended December 31, 2022. There was no revenue in 2021 related to the Joule and CIS acquisitions. Recorded as a reduction of revenue was a provision for common stock warrants of \$3.6 million and \$0 for the years ended December 31, 2022 and 2021, respectively. Revenue for GenDrive units decreased, as there were 8,274 GenDrive units recognized as revenue in 2022, as compared to 12,806 in 2021. Revenue for hydrogen infrastructure increased due primarily to mix

of customers, as there were there were 44 hydrogen fueling infrastructure sites recognized as revenue during the year ended December 31, 2022, as compared to 49 in 2021.

Revenue — services performed on fuel cell systems and related infrastructure. Revenue from services performed on fuel cell systems and related infrastructure represents revenue earned on our service and maintenance contracts and sales of spare parts. Revenue from services performed on fuel cell systems and related infrastructure for the year ended December 31, 2022 increased \$8.6 million, or 32.1%, to \$35.3 million from \$26.7 million for the year ended December 31, 2021. Recorded as a reduction of revenue from services was provision for common stock warrants of \$1.0 million and \$0.5 million for the years ended December 31, 2022 and 2021, respectively. The increase in revenue from services performed on fuel cell systems and related infrastructure in 2022 was related to our expanding customer base and increase in the number of GenDrive units and infrastructure systems in service. The average number of GenDrive units under maintenance contracts during the year ended December 31, 2022 was 19,515, compared to 16,987 in 2021.

Revenue — Power Purchase Agreements. Revenue from PPAs represents payments received from customers for power generated through the provision of equipment and service. Revenue from PPAs for the year ended December 31, 2022 increased \$12.0 million, or 34.2%, to \$47.2 million from \$35.2 million for the year ended December 31, 2021. Recorded as a reduction of revenue was provision for common stock warrants of \$3.6 million and \$3.4 million for the years ended December 31, 2022 and 2021, respectively. The increase in revenue was a result of an increase in the average number of units and customer sites party to these agreements. There was an average of 25,188 units under PPAs generating revenue in 2022, compared to 19,370 in 2021. The average number of sites under PPA arrangements was 91 in 2022, compared to 61 in 2021.

Revenue — fuel delivered to customers and related equipment. Revenue associated with fuel and related equipment delivered to customers represents the sale of hydrogen that has been purchased by the Company from a third party or generated on site. Revenue associated with fuel delivered to customers for the year ended December 31, 2022 increased \$10.3 million, or 21.9%, to \$57.2 million from \$46.9 million for the year ended December 31, 2021. Recorded as a reduction of revenue was provision for common stock warrants of \$4.5 million and \$2.6 million for the years ended December 31, 2022 and 2021, respectively. In addition, there were 196 sites associated with fuel contracts at December 31, 2022, compared to 152 at December 31, 2021. While there has been an increase in the number of sites associated with fuel contracts, the full hydrogen supply will not commence until distribution centers are utilized at capacity. This is consistent with the increased sales of fuel cell systems, related infrastructure and equipment sales as well as increases in the level of deployment of PPA sites.

Cost of Revenue

Cost of revenue — sales of fuel cell systems, related infrastructure and equipment. Cost of revenue from sales of fuel cell systems, related infrastructure and equipment includes direct materials, labor costs, and allocated overhead costs related to the manufacture of our fuel cells such as GenDrive units and GenSure stationary back-up power units, cryogenic stationary and on road storage, and electrolyzers, as well as hydrogen fueling infrastructure referred to at the site level as hydrogen installations.

Cost of revenue from sales of fuel cell systems, related infrastructure and equipment for the year ended December 31, 2022 increased \$160.9 million, or 52.4%, to \$468.1 million, compared to \$307.2 million for the year ended December 31, 2021. This increase was primarily due to costs incurred by Applied Cryo, Joule, Frames, and CIS of \$147.3 million, all of which were recent acquisitions by the Company. These costs were incremental in 2022 as these acquisitions occurred in the fourth quarter of 2021, the first quarter of 2022 or fourth quarter of 2022. There were 8,274 GenDrive units recognized as revenue during the year ended December 31, 2022, compared to 12,806 for the year ended December 31, 2021. There were 44 sites associated with hydrogen fueling infrastructure revenue for the year ended December 31, 2022 compared to 49 for the year ended December 31, 2021. The gross margin generated from sales of fuel cell systems, related infrastructure and equipment was 16.3% for the year ended December 31, 2022, compared to 21.8% for the year ended December 31, 2021, primarily due to: (i) increased material cost largely due to inflationary pressures, and higher labor costs given an increasingly competitive labor market and COVID-19 related staffing and coverage issues; and (ii) the margin on the equipment revenue from certain recently acquired businesses being lower than our historical equipment margins given the focus on integrating and scaling these new businesses.

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

services performed on fuel cell systems and related infrastructure for the year ended December 31, 2022 decreased \$4.4 million, or 6.8%, from \$63.7 million for the year ended December 31, 2021 to \$59.4 million for the year ended December 31, 2022. There were 19,515 units under maintenance contracts generating revenue during the year ended December 31, 2022, compared to 16,987 for the year ended December 31, 2021, on average. Gross loss decreased to (68.3%) for the year ended December 31, 2022 compared to (138.6%) for the year ended December 31, 2021. Cost of revenue and gross loss both decreased, primarily due to an increase in the release of loss accrual during 2022.

Cost of revenue — provision for loss accrual. The Company recorded a provision for loss accrual during 2022 of \$26.8 million, a decrease of \$45.1 million over the provision for loss accrual of \$72.0 million in 2021. The increased level of provision in 2021 was driven primarily by an increase in estimated projected costs to service units and an increase in the number of service contracts in 2021. The same level of increase in projected costs did not occur in 2022, as the Company has progressed on certain cost down initiatives. While the provision was lower in 2022 compared to 2021, the provision was slightly higher than expectations due to varied delays in reliability investment deployments.

Cost of revenue — Power Purchase Agreements. Cost of revenue from PPAs includes depreciation of assets utilized and service costs to fulfill PPA obligations and interest costs associated with certain financial institutions for leased equipment. Cost of revenue from PPAs for the year ended December 31, 2022 increased \$42.3 million, or 41.3%, to \$144.7 million from \$102.4 million for the year ended December 31, 2021. The increase in cost was primarily a result of an increase in the average number of units and customer sites party to these agreements. There was an average of 25,188 units under PPAs in 2022, compared to 19,370 in 2021. The average number of sites under PPA arrangements was 91 in 2022, compared to 61 in 2021. Gross loss increased to (206.7%) for the year ended December 31, 2022 compared to (191.3%) for the year ended December 31, 2021. In addition to volume, other unfavorable cost drivers included inflation and COVID-19 related issues, such as increased part costs and freight charges.

Cost of revenue — fuel delivered to customers and related equipment. Cost of revenue from fuel delivered to customers and related equipment represents the purchase of hydrogen from suppliers and internally produced hydrogen that is ultimately sold to customers. Cost of revenue from fuel delivered to customers for the year ended December 31, 2022 increased \$67.1 million, or 52.7%, to \$194.3 million from \$127.2 million for the year ended December 31, 2021. The increase was due primarily to higher volume of liquid hydrogen delivered to customer sites as a result of an increase in the number of hydrogen installations completed under GenKey agreements and higher fuel costs driven by the impact of higher natural gas prices and varied third-party vendor force majeure issues. There were 196 sites associated with fuel contracts at December 31, 2022, compared to 152 at December 31, 2021. Gross loss increased to (239.6%) during the year ended December 31, 2022 compared to (171.1%) during the year ended December 31, 2021, primarily due to the increase in cost of revenue described above, as well as a reduction of revenue resulting from an increase in the provision for common stock warrants of \$4.5 million and \$2.6 million for the year ended December 31, 2022 and 2021, respectively.

Expenses

Research and development expense. Research and development expense includes: materials to build development and prototype units, cash and non-cash compensation and benefits for the engineering and related staff, expenses for contract engineers, fees paid to consultants for services provided, materials and supplies consumed, facility related costs such as computer and network services, and other general overhead costs associated with our research and development activities. Research and development expense for the year ended December 31, 2022 increased \$34.8 million, or 53.8%, to \$99.6 million from \$64.8 million for the year ended December 31, 2021. The overall growth in R&D investment is commensurate with the Company's future expansion into new markets, new product lines, and varied vertical integrations.

Selling, general and administrative expenses. Selling, general and administrative expenses includes cash and non-cash compensation, benefits, amortization of intangible assets and related costs in support of our general corporate functions, including general management, finance and accounting, human resources, selling and marketing, information technology and legal services. Selling, general and administrative expenses for the year ended December 31, 2022 increased \$184.1 million, or 102.3%, to \$363.9 million from \$179.9 million for the year ended December 31, 2021. This increase was primarily related to increases in stock-based compensation of \$91.7 million, as well as compensation expenses related to headcount increases and branding expenses.

Impairment of long-lived assets. The Company recorded an impairment of \$5.2 million for the year ended December 31, 2022, as compared to \$10.2 million for the year ended December 31, 2021. The impairment of long-lived assets in both years was primarily related to right of use assets and equipment related to delivery of fuel to customers.

Change in fair value of contingent consideration. The fair value of the contingent consideration is related to earnouts for the Giner ELX, Inc., United Hydrogen Group Inc, Frames, Applied Cryo, and Joule acquisitions. The change in fair value for the year ended December 31, 2022 and 2021 was \$16.5 million and \$11.2 million, respectively, primarily due to fair value remeasurements.

Interest income. Interest income primarily consists of income generated by our investment holdings, restricted cash escrow accounts, and money market accounts. Interest income for the year ended December 31, 2022, increased \$33.2 million or 822.3%, as compared to the year ended December 31, 2021, and was due to an increase in available-for-sale securities during 2021 consisting primarily of corporate bonds and U.S. Treasuries.

Interest expense. Interest expense consists of interest expense related to our long-term debt, convertible senior notes, obligations under finance leases and our finance obligations. Interest expense for the year ended December 31, 2022, decreased \$4.2 million, as compared to the year ended December 31, 2021.

Other expense, net. Other expense, net consists of other expenses related to our foreign currency exchange losses, offset by interest and other income. Other expense, net increased \$1.5 million for the year ended December 31, 2022 in comparison to 2021.

Realized loss on investments, net. Realized loss on investments, net consists of the sales related to available-for-sale debt securities. For the year ended December 31, 2022, the Company had \$1.4 million of net realized loss on investments as compared to \$0.1 million for the year ended December 31, 2021.

Change in fair value of equity securities. Change in fair value of equity securities consists of the changes in fair value for equity securities from the purchase date to the end of the period. For the year ended December 31, 2022, the Company had \$18.2 million of decrease in fair value of equity securities as compared to an increase in fair value \$6.7 million for the year ended December 31, 2021.

Loss on equity method investments. Loss on equity method investments consists of our interest in HyVia, which is our 50/50 joint venture with Renault, AccionaPlug S.L., which is our 50/50 joint venture with Acciona, and SK Plug Hyverse, which is our 49/51 joint venture with SK E&S. For the year ended December 31, 2022, the Company recorded a loss of \$20.2 million on equity method investments. These losses are driven from the start-up activities for commercial and production operations.

Income Tax

The Company recognized an income tax expense for the year ended December 31, 2022 of \$0.8 million related to foreign current and deferred tax expense of \$1.7 million and the \$0.9 million reversal of U.S. net deferred tax liabilities in connection with the acquisition of Giner ELX, Inc. The Company has not changed its overall conclusion with respect to the need for a valuation allowance against its net deferred tax assets, which remain fully reserved within the United States and foreign jurisdictions, with the exception of the Netherlands.

The net deferred tax asset generated from the Company's current period NOL has been offset by a full valuation allowance because it is more likely than not that the tax benefits of the NOL carry forward will not be realized. The Company recognizes interest and penalties on the Interest and other expense, net line in the accompanying consolidated statements of operations.

The Company recognized an income tax benefit for the year ended December 31, 2021 of \$16.2 million primarily related to the recognition of net deferred tax liabilities in connection with the acquisition of Applied Cryo. This resulted in a corresponding reduction in our deferred tax asset valuation allowance. The Company has not changed its overall conclusion with respect to the need for a valuation allowance against its net deferred tax assets, which remain fully reserved.

Liquidity and Capital Resources

As of December 31, 2022, the Company had \$690.6 million of cash and cash equivalents, \$858.7 million of restricted cash, \$1.3 billion of available-for-sale securities and \$134.8 million of equity securities.

The Company has continued to experience negative cash flows from operations and net losses. The Company incurred net losses attributable to common stockholders of \$724.0 million, \$460.0 million and \$596.2 million for the years ended December 31, 2022, 2021, and 2020, respectively.

The net cash (used) in operating activities for the year ended December 31, 2022, 2021, and 2020 was \$828.6 million, \$358.2 million, and \$155.5 million, respectively. The Company's working capital was \$2.7 billion at December 31, 2022, which included cash and cash equivalents of \$690.6 million and restricted cash of \$159.0 million. The Company plans to invest a portion of its available cash to expand its current production and manufacturing capacity, construction of hydrogen plants and to fund strategic acquisitions and partnerships, and capital projects. Future use of the Company's funds is discretionary and the Company believes that its working capital and cash position will be sufficient to fund its operations for at least one year after the date the financial statements are issued.

The net cash used in investing activities for the year ended December 31, 2022, 2021, and 2020 was \$679.4 million, \$1.7 billion, and \$95.4 million, respectively. This included purchases of property, plant and equipment and outflows associated with materials, labor, and overhead necessary to construct new leased property. Cash outflows related to equipment that we lease directly to customers are included in net cash used in investing activities.

The net cash (used in) provided by financing activities for the year ended December 31, 2022, 2021, and 2020 was (\$77.5) million, \$3.6 billion, and \$1.5 billion, respectively. The change was primarily driven by proceeds from public and private offerings, net of transaction costs that occurred in 2021.

The Company's significant obligations consisted of the following as of December 31, 2022:

- Operating and finance leases totaling \$320.4 million and \$46.1 million, respectively, of which \$48.9 million and \$8.1 million, respectively, are due within the next 12 months. These leases are primarily related to sale/leaseback agreements entered into with various financial institutions to facilitate the Company's commercial transactions with key customers.
- Finance obligations totaling \$329.2 million of which approximately \$58.9 million is due within the next 12 months. Finance obligations consist primarily of debt associated with the sale of future revenues and failed sale/leaseback transactions.
- Convertible senior notes totaling \$193.9 million at December 31, 2022, none of which is due within the next twelve months. See Note 15 to the consolidated financial statements, "Convertible Senior Notes," for more details.

The Company believes that its current working capital of \$2.7 billion at December 31, 2022, which includes unrestricted cash and cash equivalents of \$690.6 million, and available-for-sale securities of \$1.3 billion, will provide sufficient liquidity to fund operations for a least one year after the date the financial statements are issued.

Common Stock Issuances

In January and February 2021, the Company issued and sold in a registered equity offering an aggregate of 32.2 million shares of its common stock at a purchase price of \$65.00 per share for net proceeds of approximately \$2.0 billion. Furthermore, in February 2021, the Company completed a sale of its common stock in connection with a strategic partnership with SK Holdings Co., Ltd. ("SK Holdings"). The Company sold 54,996,188 shares of its common stock to a subsidiary of SK Holdings at a purchase price of \$29.29 per share, or an aggregate purchase price of approximately \$1.6 billion.

In November 2020, the Company issued and sold in a registered direct offering an aggregate of 43,700,000 shares of its common stock at a purchase price of \$22.25 per share for net proceeds of approximately \$927.3 million.

In August 2020, the Company issued and sold in a registered direct offering an aggregate of 35,276,250 shares of its common stock at a purchase price of \$10.25 per share for net proceeds of approximately \$344.4 million.

Secured Debt

In March 2019, the Company entered into a loan and security agreement, as amended, with Generate Lending, LLC, providing for a secured term loan facility in the amount of \$100 million (the “Term Loan Facility”). In December 2022, the Company fully repaid the outstanding balance of the Term Loan Facility.

In June 2020, the Company acquired debt as part of the acquisition of United Hydrogen Group Inc. The outstanding carrying value of the debt was \$9.0 million as of December 31, 2022, bearing varying interest rates ranging from 2.2% to 8.3%, and is scheduled to mature in 2026.

3.75% Convertible Senior Notes

On May 18, 2020, the Company issued \$200.0 million in aggregate principal amount of 3.75% Convertible Senior Notes due June 1, 2025, which is referred to herein as the 3.75% Convertible Senior Notes, in a private placement to qualified institutional buyers pursuant to Rule 144A under the Securities Act of 1933, as amended, or the Securities Act. On May 29, 2020, the Company issued an additional \$12.5 million in aggregate principal amount of 3.75% Convertible Senior Notes.

At issuance in May 2020, the total net proceeds from the 3.75% Convertible Senior Notes, after deducting the initial purchaser’s discount, the costs of related capped calls and other issuance costs, were approximately \$189.2 million.

The 3.75% Convertible Senior Notes bear interest at a rate of 3.75% per year, payable semi-annually in arrears on June 1 and December 1 of each year, beginning on December 1, 2020. The notes will mature on June 1, 2025, unless earlier converted, redeemed or repurchased in accordance with their terms.

The 3.75% Convertible Senior Notes are senior, unsecured obligations of the Company and rank senior in right of payment to any of the Company’s indebtedness that is expressly subordinated in right of payment to the notes, equal in right of payment to any of the Company’s existing and future liabilities that are not so subordinated, effectively junior in right of payment to any of the Company’s secured indebtedness to the extent of the value of the collateral securing such indebtedness, and structurally subordinated to all indebtedness and other liabilities, including trade payables, of its current or future subsidiaries.

Holders of the 3.75% Convertible Senior Notes may convert their notes at their option at any time prior to the close of the business day immediately preceding December 1, 2024 in the following circumstances:

- 1) during any calendar quarter commencing after March 31, 2021, if the last reported sale price of the Company’s common stock exceeds 130% of the conversion price for each of at least 20 trading days (whether or not consecutive) during a period of 30 consecutive trading days ending on, and including, the last trading day of the immediately preceding calendar quarter;
- 2) during the five business days after any five consecutive trading day period (such five consecutive trading day period, the measurement period) in which the trading price per \$1,000 principal amount of the 3.75% Convertible Senior Notes for each trading day of the measurement period was less than 98% of the product of the last reported sale price of the Company’s common stock and the conversion rate on each such trading day;
- 3) if the Company calls any or all of the 3.75% Convertible Senior Notes for redemption, any such notes that have been called for redemption may be converted at any time prior to the close of business on the second scheduled trading day immediately preceding the redemption date; or
- 4) upon the occurrence of specified corporate events, as described in the indenture governing the 3.75% Convertible Senior Notes.

On or after December 1, 2024, the holders of the 3.75% Convertible Senior Notes may convert all or any portion of their notes at any time prior to the close of business on the second scheduled trading day immediately preceding the maturity date regardless of the foregoing conditions.

The initial conversion rate for the 3.75% Convertible Senior Notes is 198.6196 shares of the Company’s common stock per \$1,000 principal amount of notes, which is equivalent to an initial conversion price of approximately \$5.03 per

share of the Company's common stock, subject to adjustment upon the occurrence of specified events. Upon conversion, the Company will pay or deliver, as applicable, cash, shares of the Company's common stock or a combination of cash and shares of the Company's common stock, at the Company's election. During the year ended December 31, 2022, there were no conversions. During the year ended December 31, 2021, \$15.2 million of the 3.75% Convertible Senior Notes were converted and the Company issued approximately 3.0 million shares of common stock in conjunction with these conversions.

In addition, following certain corporate events or following issuance of a notice of redemption, the Company will increase the conversion rate for a holder who elects to convert its notes in connection with such a corporate event or convert its notes called for redemption during the related redemption period in certain circumstances.

The 3.75% Convertible Senior Notes will be redeemable, in whole or in part, at the Company's option at any time, and from time to time, on or after June 5, 2023 and before the 41st scheduled trading day immediately before the maturity date, at a cash redemption price equal to 100% of the principal amount of the notes to be redeemed, plus accrued and unpaid interest, if any, but only if the last reported sale price per share of the Company's common stock exceeds 130% of the conversion price then in effect for at least 20 trading days (whether or not consecutive), including at least one of the three trading days immediately preceding the date the Company sends the related redemption notice, during any 30 consecutive trading day period ending on, and including, the trading day immediately preceding the date on which the Company sends such redemption notice.

If the Company undergoes a "fundamental change" (as defined in the Indenture), holders may require the Company to repurchase their notes for cash all or any portion of their notes at a fundamental change repurchase price equal to 100% of the principal amount of the notes to be repurchased, plus accrued and unpaid interest, to, but excluding, the fundamental change repurchase date.

The Company accounts for the 3.75% Convertible Senior Notes as a liability. We incurred transaction costs related to the issuance of the 3.75% Convertible Senior Notes of approximately \$7.0 million, consisting of initial purchasers' discount of approximately \$6.4 million and other issuance costs of \$0.6 million which were recorded as debt issuance cost (presented as contra debt in the consolidated balance sheets) and are being amortized to interest expense over the term of the 3.75% Convertible Senior Notes.

Based on the closing price of the Company's common stock of \$12.37 on December 30, 2022, the if-converted value of the notes was greater than the principal amount. The estimated fair value of the note at December 31, 2022 was approximately \$493.0 million. Fair value estimation was primarily based on a stock exchange, active trade on December 29, 2022 of the 3.75% Senior Convertible Note. The Company considers this a Level 2 fair value measurement.

Capped Call

In conjunction with the pricing of the 3.75% Convertible Senior Notes, the Company entered into privately negotiated capped call transactions (the "3.75% Notes Capped Call") with certain counterparties at a price of \$16.2 million. The 3.75% Notes Capped Call covers, subject to anti-dilution adjustments, the aggregate number of shares of the Company's common stock that underlie the initial 3.75% Convertible Senior Notes and is generally expected to reduce potential dilution to the Company's common stock upon any conversion of the 3.75% Convertible Senior Notes and/or offset any cash payments the Company is required to make in excess of the principal amount of the converted notes, as the case may be, with such reduction and/or offset subject to a cap based on the cap price. The cap price of the 3.75% Notes Capped Call is initially \$6.7560 per share, which represents a premium of approximately 60% over the last then-reported sale price of the Company's common stock of \$4.11 per share on the date of the transaction and is subject to certain adjustments under the terms of the 3.75% Notes Capped Call. The 3.75% Notes Capped Call becomes exercisable if the conversion option is exercised.

The net cost incurred in connection with the 3.75% Notes Capped Call has been recorded as a reduction to additional paid-in capital in the consolidated balance sheet.

5.5% Convertible Senior Notes

In March 2018, the Company issued \$100.0 million in aggregate principal amount of the 5.5% Convertible Senior Notes due on March 15, 2023 (the "5.5 Convertible Senior Notes"), in a private placement to qualified institutional buyers pursuant to Rule 144A under the Securities Act.

In May 2020, the Company used a portion of the net proceeds from the issuance of the 3.75% Convertible Senior Notes to finance the cash portion of the partial repurchase of the 5.5% Convertible Senior Notes, which consisted of a repurchase of approximately \$66.3 million in aggregate principal amount of the 5.5% Convertible Senior Notes in privately-negotiated transactions for aggregate consideration of \$128.9 million, consisting of approximately \$90.2 million in cash and approximately 9.4 million shares of the Company's common stock. The partial repurchase of the 5.5% Convertible Senior Notes resulted in a \$13.2 million gain on early debt extinguishment. In the fourth quarter of 2020, \$33.5 million of the remaining 5.5% Convertible Senior Notes were converted into 14.6 million shares of common stock which resulted in a gain of approximately \$4.5 million which was recorded on the consolidated statement of operations on the gain (loss) on extinguishment of debt line.

On January 7, 2021, the remaining aggregate principal of \$160 thousand aggregate principal amount of the 5.5% Convertible Senior Notes were converted into 69,808 shares of common stock. Interest expense and amortization for the period were immaterial.

Capped Call

In conjunction with the pricing of the 5.5% Convertible Senior Notes, the Company entered into privately negotiated capped call transactions (the "5.5% Notes Capped Call") with certain counterparties at a price of \$16.0 million to reduce the potential dilution to the Company's common stock upon any conversion of the 5.5% Convertible Senior Notes and/or offset any cash payments the Company is required to make in excess of the principal amount of the converted 5.5% Convertible Senior Notes, as the case may be. The net cost incurred in connection with the 5.5% Notes Capped Call has been recorded as a reduction to additional paid-in capital in the consolidated balance sheets.

In conjunction with the pricing of the partial repurchase of the 5.5% Convertible Senior Notes, the Company terminated 100% of the 5.5% Notes Capped Call on June 5, 2020. As a result of the termination, the Company received \$24.2 million, which was recorded in additional paid-in capital in the consolidated balance sheets.

The net cost incurred in connection with the 5.5% Notes Capped Call has been recorded as a reduction to additional paid-in capital in the consolidated balance sheets.

In conjunction with the partial repurchase of the 5.5% Convertible Senior Notes, the Company terminated 100% of the 5.5% Notes Capped Call on June 5, 2020. As a result of the termination, the Company received \$24.2 million which was recorded in additional paid-in capital.

Common Stock Forward

In connection with the issuance of the 5.5% Convertible Senior Notes, the Company also entered into a forward stock purchase transaction (the "Common Stock Forward"), pursuant to which the Company agreed to purchase 14,397,906 shares of its common stock for settlement on or about March 15, 2023. In connection with the issuance of the 3.75% Convertible Senior Notes and the partial repurchase of the 5.5% Convertible Senior Notes, the Company amended and extended the maturity of the Common Stock Forward to June 1, 2025. The number of shares of common stock that the Company will ultimately repurchase under the Common Stock Forward is subject to customary anti-dilution adjustments. The Common Stock Forward is subject to early settlement or settlement with alternative consideration in the event of certain corporate transactions.

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

The book value of the 5.5% Notes Capped Call and Common Stock Forward are not remeasured. There were no shares of common stock settled in connection with the Common Stock Forward during the year ended December 31, 2022. During the year ended December 31, 2021, 8.1 million shares were settled and received by the Company.

Common Stock Transactions***Amazon Transaction Agreement in 2022***

On August 24, 2022, the Company and Amazon entered into a Transaction Agreement (the “2022 Transaction Agreement”), under which the Company concurrently issued to Amazon.com NV Investment Holdings LLC, a wholly owned subsidiary of Amazon, a warrant (the “2022 Amazon Warrant”) to acquire up to 16,000,000 shares (the “2022 Amazon Warrant Shares”) of the Company’s common stock, subject to certain vesting events described below. The Company and Amazon entered into the 2022 Transaction Agreement in connection with a concurrent commercial arrangement under which Amazon agreed to purchase hydrogen fuel from the Company through August 24, 2029.

Warrant

1,000,000 of the 2022 Amazon Warrant Shares vested immediately upon issuance of the 2022 Amazon Warrant. 15,000,000 of the 2022 Amazon Warrant Shares will vest in multiple tranches over the 7-year term of the 2022 Amazon Warrant based on payments made to the Company directly by Amazon or its affiliates, or indirectly through third parties, with 15,000,000 of the 2022 Amazon Warrant Shares fully vesting if Amazon-related payments of \$2.1 billion are made in the aggregate. The exercise price for the first 9,000,000 2022 Amazon Warrant Shares is \$22.9841 per share and the fair value on the grant date was \$20.36. The exercise price for the remaining 7,000,000 2022 Amazon Warrant Shares will be an amount per share equal to 90% of the 30-day volume weighted average share price of the Company’s common stock as of the final vesting event that results in full vesting of the first 9,000,000 2022 Amazon Warrant Shares. The 2022 Amazon Warrant is exercisable through August 24, 2029.

Upon the consummation of certain change of control transactions (as defined in the 2022 Amazon Warrant) prior to the vesting of at least 60% of the aggregate 2022 Amazon Warrant Shares, the 2022 Amazon Warrant will automatically vest and become exercisable with respect to an additional number of 2022 Amazon Warrant Shares such that 60% of the aggregate 2022 Amazon Warrant Shares shall have vested. If a change of control transaction is consummated after the vesting of at least 60% of the aggregate 2022 Amazon Warrant Shares, then no acceleration of vesting will occur with respect to any of the unvested 2022 Amazon Warrant Shares as a result of the transaction. The exercise price and the 2022 Amazon Warrant Shares issuable upon exercise of the Amazon Warrant are subject to customary antidilution adjustments.

At December 31, 2022, 1,000,000 of the 2022 Amazon Warrant Shares issued pursuant to the 2022 Transaction Agreement had vested upon issuance. The warrant charge associated with the vested shares of \$20.4 million was capitalized to contract assets in our consolidated financial statements based on the grant date fair value and is subsequently amortized ratably as a reduction to revenue based on the Company’s estimate of revenue over the term of the agreement. The grant date fair value of tranches 2 and 3 will also be amortized ratably as a reduction to revenue based on the Company’s estimate of revenue over the term of the agreement. Because the exercise price has yet to be determined, the fair value of tranche 4 will be remeasured at each reporting period end and amortized ratably as a reduction to revenue based on the Company’s estimate of revenue over the term of the agreement. The total amount of provision for common stock warrants recorded as a reduction of revenue for the 2022 Amazon Warrant during the year ended December 31, 2022 was \$5.2 million.

The assumptions used to calculate the valuations as of August 24, 2022 and December 31, 2022 are as follows:

	Tranches 1-3 August 24, 2022	Tranche 4 December 31, 2022
Risk-free interest rate	3.15%	3.88%
Volatility	75.00%	75.00%
Expected average term	7 years	4 years
Exercise price	\$22.98	\$11.13
Stock price	\$20.36	\$12.37

Amazon Transaction Agreement in 2017

On April 4, 2017, the Company and Amazon entered into a Transaction Agreement (the “2017 Transaction Agreement”), pursuant to which the Company agreed to issue to Amazon a warrant (the “2017 Amazon Warrant”) to acquire up to 55,286,696 shares of the Company’s common stock (the “2017 Amazon Warrant Shares”), subject to certain

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vesting events described below. The Company and Amazon entered into the 2017 Amazon Transaction Agreement in connection with existing commercial agreements between the Company and Amazon with respect to the deployment of the Company's GenKey fuel cell technology at Amazon distribution centers. The existing commercial agreements contemplate, but do not guarantee, future purchase orders for the Company's fuel cell technology. The vesting of the 2017 Amazon Warrant Shares was conditioned upon payments made by Amazon or its affiliates (directly or indirectly through third parties) pursuant to the existing commercial agreements.

Under the terms of the 2017 Amazon Warrant, the first tranche of the 5,819,652 of the 2017 Amazon Warrant Shares vested upon execution of the 2017 Amazon Warrant, and the remaining 2017 Amazon Warrant Shares vest based on Amazon's payment of up to \$600.0 million to the Company in connection with Amazon's purchase of goods and services from the Company. The \$6.7 million fair value of the first tranche of the 2017 Amazon Warrant Shares, was recognized as selling, general and administrative expense upon execution of the 2017 Amazon Warrant.

Provision for the second and third tranches of the 2017 Amazon Warrant Shares was recorded as a reduction of revenue, because they represent consideration payable to a customer.

The fair value of the second tranche of the 2017 Amazon Warrant Shares was measured at January 1, 2019, upon adoption of ASU 2019-08. The second tranche of 29,098,260 of the 2017 Amazon Warrant Shares vested in four equal installments, as Amazon or its affiliates, directly or indirectly through third parties, made an aggregate of \$50.0 million in payments for goods and services to the Company, up to payments totaling \$200.0 million in the aggregate. The last installment of the second tranche vested on November 2, 2020. Revenue reductions of \$497 thousand, \$9.0 million and \$4.1 million were associated with the second tranche of the 2017 Amazon Warrant Shares were recorded in 2021, 2020, and 2019, respectively, under the terms of the 2017 Amazon Warrant.

Under the terms of the 2017 Amazon Warrant, the third tranche of 20,368,784 of the 2017 Amazon Warrant Shares vests in eight equal installments, as Amazon or its affiliates, directly or indirectly through third parties, made an aggregate of \$50.0 million in payments for goods and services to the Company, up to payments totaling \$400.0 million in the aggregate. The measurement date for the third tranche of the 2017 Amazon Warrant Shares was November 2, 2020, when their exercise price was determined, as discussed further below. The fair value of the third tranche of the 2017 Amazon Warrant Shares was determined to be \$10.57 each. During 2020, revenue reductions of \$24.1 million associated with the third tranche of the 2017 Amazon Warrant Shares were recorded under the terms of the 2017 Amazon Warrant, prior to the December 31, 2020 waiver described below.

On December 31, 2020, the Company waived the remaining vesting conditions under the 2017 Amazon Warrant, which resulted in the immediate vesting of all the third tranche of the 2017 Amazon Warrant Shares and recognition of an additional \$399.7 million reduction to revenue.

The \$399.7 million reduction to revenue resulting from the December 31, 2020 waiver was determined based upon a probability assessment of whether the underlying shares would have vested under the terms of the 2017 Amazon Warrant. Based upon the Company's projections of probable future cash collections from Amazon (i.e., a Type I share based payment modification), a reduction of revenue associated with 5,354,905 of the 2017 Amazon Warrant Shares was recognized at their previously measured November 2, 2020 fair value of \$10.57 per warrant. A reduction of revenue associated with the remaining 12,730,490 of the 2017 Amazon Warrant Shares was recognized at their December 31, 2020 fair value of \$26.95 each, based upon the Company's assessment that associated future cash collections from Amazon were not deemed probable (i.e., a Type III share-based payment modification).

The \$399.7 million reduction to revenue was recognized during the year ended December 31, 2020 because the Company concluded such amount was not recoverable from the margins expected from future purchases by Amazon under the 2017 Amazon Warrant, and no exclusivity or other rights were conferred to the Company in connection with the December 31, 2020 waiver. Additionally, for the year ended December 31, 2020, the Company recorded a reduction to the provision for warrants of \$12.8 million in connection with the release of the service loss accrual.

The 2017 Amazon Warrant was exercised with respect to 24,704,450 and 17,461,994 shares of the Company's common stock as of December 31, 2022 and 2021, respectively.

At both December 31, 2022 and December 31, 2021, 55,286,696 of the 2017 Amazon Warrant Shares had vested. The total amount of provision for common stock warrants recorded as a reduction of revenue for the 2017 Amazon Warrant during the years ended December 31, 2022, 2021, and 2020 was \$0.4 million, \$0.5 million and \$420.0 million, respectively.

The exercise price for the first and second tranches of the 2017 Amazon Warrant Shares was \$1.1893 per share. The exercise price of the third tranche of the 2017 Amazon Warrant Shares was \$13.81 per share, which was determined pursuant to the terms of the 2017 Amazon Warrant as an amount equal to 90% of the 30-day volume weighted average share price of the Company's common stock as of November 2, 2020, the final vesting date of the second tranche of the 2017 Amazon Warrant Shares. The 2017 Amazon Warrant is exercisable through April 4, 2027. The 2017 Amazon Warrant provides for net share settlement that, if elected by the holder, will reduce the number of shares issued upon exercise to reflect net settlement of the exercise price. The 2017 Amazon Warrant provides for certain adjustments that may be made to the exercise price and the number of shares of common stock issuable upon exercise due to customary anti-dilution provisions based on future events. The 2017 Amazon Warrant is classified as an equity instrument.

Fair value of the 2017 Amazon Warrant at December 31, 2020 and November 2, 2020 was based on the Black Scholes Option Pricing Model, which is based, in part, upon level 3 unobservable inputs for which there is little or no market data, requiring the Company to develop its own assumptions. All 2017 Amazon Warrant Shares were fully vested as of December 31, 2020.

The Company used the following assumptions for its 2017 Amazon Warrant:

	December 31, 2020	November 2, 2020
Risk-free interest rate	0.58%	0.58%
Volatility	75.00%	75.00%
Expected average term	6.26	6.42
Exercise price	\$13.81	\$13.81
Stock price	\$33.91	\$15.47

Walmart Transaction Agreement

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

The majority of the Walmart Warrant Shares will vest based on Walmart's payment of up to \$600.0 million to the Company in connection with Walmart's purchase of goods and services from the Company. The first tranche of 5,819,652 Walmart Warrant Shares vested upon the execution of the Walmart Warrant and was fully exercised as of December 31, 2020. Accordingly, \$10.9 million, the fair value of the first tranche of Walmart Warrant Shares, was recorded as a provision for common stock warrants and presented as a reduction to revenue on the consolidated statements of operations during 2017. All future provision for common stock warrants is measured based on their grant-date fair value and recorded as a charge against revenue. The second tranche of 29,098,260 Walmart Warrant Shares vests in four installments of 7,274,565 Walmart Warrant Shares each time Walmart or its affiliates, directly or indirectly through third parties, make an aggregate of \$50.0 million in payments for goods and services to the Company, up to payments totaling \$200.0 million in the aggregate. The exercise price for the first and second tranches of Walmart Warrant Shares is \$2.1231 per share. After Walmart has made payments to the Company totaling \$200.0 million, the third tranche of 20,368,784 Walmart Warrant Shares will vest in eight installments of 2,546,098 Walmart Warrant Shares each time Walmart or its affiliates, directly or indirectly through third parties, make an aggregate of \$50.0 million in payments for goods and services to the Company, up to payments totaling \$400.0 million in the aggregate. The exercise price of the third tranche of Walmart Warrant Shares will be an amount per share equal to 90% of the 30-day volume weighted average share price of the common stock as of the final vesting date of the second tranche of Walmart Warrant Shares, provided that, with

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limited exceptions, the exercise price for the third tranche will not be lower than \$1.1893. The Walmart Warrant is exercisable through July 20, 2027.

The Walmart Warrant provides for net share settlement that, if elected by the holder, will reduce the number of shares issued upon exercise to reflect net settlement of the exercise price. The Walmart Warrant provides for certain adjustments that may be made to the exercise price and the number of shares of common stock issuable upon exercise due to customary anti-dilution provisions based on future events. The Walmart Warrant is classified as an equity instrument. The warrant had been exercised with respect to 13,094,217 shares of the Company's common stock as of both December 31, 2022 and 2021.

At December 31, 2022 and December 31, 2021, 27,643,347 and 20,368,782 of the Walmart Warrant Shares had vested, respectively. The total amount of provision for common stock warrants recorded as a reduction of revenue for the Walmart Warrant during the years ended December 31, 2022, 2021, and 2020 \$7.1 million, \$6.1 million, and \$5.0 million, respectively.

Fair value of the Walmart Warrant was based on the Black Scholes Option Pricing Model, which is based, in part, upon level 3 unobservable inputs for which there is little or no market data, requiring the Company to develop its own assumptions. Except for the third tranche, all existing unvested Walmart Warrant Shares are measured using a measurement date of January 1, 2019, the adoption date, in accordance with ASU 2019-08.

The Company used the following assumptions for its Walmart Warrant:

	January 1, 2019
Risk-free interest rate	2.63%
Volatility	95.00%
Expected average term	8.55
Exercise price	\$2.12
Stock price	\$1.24

The assumptions used to calculate the valuations of the final tranche of the Walmart Warrant as of December 31, 2022 are as follows:

	December 31, 2022
Risk-free interest rate	3.92%
Volatility	75.00%
Expected average term	3.5 years
Exercise price	\$11.13
Stock price	\$12.37

Operating and Finance Lease Liabilities

As of December 31, 2022, the Company had operating leases, as lessee, primarily associated with sale/leaseback transactions that are partially secured by restricted cash, security deposits and pledged escrows (see also Note 1 to the consolidated financial statements, "Nature of Operations") as summarized below. These leases expire over the next one to nine years. Minimum rent payments under operating leases are recognized on a straight-line basis over the term of the lease.

Leases contain termination clauses with associated penalties, the amount of which cause the likelihood of cancellation to be remote. At the end of the lease term, the leased assets may be returned to the lessor by the Company, the Company may negotiate with the lessor to purchase the assets at fair market value, or the Company may negotiate with the lessor to renew the lease at market rental rates. No residual value guarantees are contained in the leases. No financial covenants are contained within the lease, however there are customary operational covenants such as assurance the Company properly maintains the leased assets and carries appropriate insurance, etc. The leases include credit support in the form of either cash, collateral or letters of credit. See Note 21 to the consolidated financial statements, "Commitments and contingencies," for a description of cash held as security associated with the leases.

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The Company has finance leases associated with its property and equipment in Latham, New York and at fueling customer locations. The fair value of this finance obligation approximated the carrying value as of December 31, 2022.

Future minimum lease payments under operating and finance leases (with initial or remaining lease terms in excess of one year) as of December 31, 2022 were as follows (in thousands):

	Operating Lease Liability	Finance Lease Liability	Total Lease Liabilities
2023	\$ 82,019	\$ 10,901	\$ 92,920
2024	81,157	10,851	92,008
2025	76,444	13,763	90,207
2026	67,951	10,904	78,855
2027	53,741	6,947	60,688
2028 and thereafter	96,147	—	96,147
Total future minimum payments	457,459	53,366	510,824
Less imputed interest	(137,094)	(7,230)	(144,324)
Total	\$ 320,365	\$ 46,137	\$ 366,500

Rental expense for all operating leases was \$67.6 million, \$38.6 million, and \$22.3 million for the years ended December 31, 2022, 2021, and 2020, respectively.

At December 31, 2022 and 2021, security deposits associated with sale/leaseback transactions were \$5.8 million and \$3.5 million, respectively, and were included in other assets in the consolidated balance sheet.

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

	Year ended December 31, 2022	Year ended December 31, 2021
Cash payments (in thousands)	\$ 63,214	\$ 37,463
Weighted average remaining lease term (years)	6.52	5.60
Weighted average discount rate	11.2%	10.9%

Finance lease costs include amortization of the right of use assets (i.e., depreciation expense) and interest on lease liabilities (i.e., interest and other expense, net in the consolidated statement of operations), and were \$6.2 and \$2.1 million for the year ended December 31, 2022 and 2021, respectively.

At December 31, 2022 and 2021, the right of use assets associated with finance leases, net was \$53.7 million and \$33.9 million, respectively. The accumulated depreciation for these right of use assets was \$4.7 million and \$1.5 million at December 31, 2022 and 2021, respectively.

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

	Year ended December 31, 2022	Year ended December 31, 2021
Cash payments (in thousands)	\$ 9,033	\$ 3,648
Weighted average remaining lease term (years)	3.92	4.56
Weighted average discount rate	6.7%	6.7%

The Company has outstanding obligations to Wells Fargo under several Master Lease Agreements totaling \$159.5 million at December 31, 2022. These outstanding obligations are included in operating lease liabilities, and finance obligations on the consolidated balance sheets.

Restricted Cash

In connection with certain of the above noted sale/leaseback agreements, cash of \$383.7 million and \$275.1 million, respectively, was required to be restricted as security as of December 31, 2022 and 2021, which will be released over the lease term. As of December 31, 2022 and 2021, the Company also had certain letters of credit backed by security deposits totaling \$379.6 million and \$286.0 million, respectively, that are security for the above noted sale/leaseback agreements.

As of December 31, 2022 and 2021, the Company had \$75.5 and \$67.7 million, respectively, held in escrow related to the construction of certain hydrogen plants.

The Company also had \$5.0 million, \$2.3 million, and \$1.8 million of consideration held by our paying agent in connection with the Applied Cryo, Joule, and CIS acquisitions, respectively, reported as restricted cash as of December 31, 2022, with a corresponding accrued liability on the Company's consolidated balance sheet. Additionally, the Company had \$10.8 million in restricted cash as collateral resulting from the Frames acquisition as of December 31, 2022.

Critical Accounting Estimates

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

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

Revenue Recognition

The Company enters into contracts that may contain one or a combination of fuel cell systems and infrastructure, installation, maintenance, spare parts, fuel delivery and other support services. Contracts containing fuel cell systems and related infrastructure may be sold directly to customers or provided to customers under a PPA. The Company also enters into contracts that contain electrolyzer stacks, systems, maintenance, and other support services.

The Company does not include a right of return on its products other than rights related to standard warranty provisions that permit repair or replacement of defective goods. The Company accrues for anticipated standard warranty costs at the same time that revenue is recognized for the related product, or when circumstances indicate that warranty costs will be incurred, as applicable. Any prepaid amounts would only be refunded to the extent services have not been provided or the fuel cell systems or infrastructure have not been delivered.

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

Promises to the customer are separated into performance obligations, and are accounted for separately if they are (1) capable of being distinct and (2) distinct in the context of the contract. The Company considers a performance obligation to be distinct if the customer can benefit from the good or service either on its own or together with other resources readily available to the customer and the Company's promise to transfer the goods or service to the customer is separately identifiable from other promises in the contract. The Company allocates revenue to each distinct performance obligation based on relative standalone selling prices.

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

The Company has issued to each of Amazon.com NV Investment Holdings LLC and Walmart warrants to purchase shares of the Company's common stock. The Company presents the provision for common stock warrants within each revenue-related line item on the consolidated statements of operations. This presentation reflects a discount that those common stock warrants represent, and therefore revenue is net of these non-cash charges. The provision of common stock warrants is allocated to the relevant revenue-related line items based upon the expected mix of the revenue for each respective contract. See Note 17 to the consolidated financial statements, "Warrant Transaction Agreements," for more details.

Nature of goods and services

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

(i) Sales of Fuel Cell Systems, Related Infrastructure and Equipment

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

The Company uses a variety of information sources in determining standalone selling prices for fuel cells systems and the related infrastructure. For GenDrive fuel cells, given the nascent nature of the Company's market, the Company considers several inputs, including prices from a limited number of standalone sales as well as the Company's negotiations with customers. The Company also considers its costs to produce fuel cells as well as comparable list prices in estimating standalone selling prices. The Company uses applicable observable evidence from similar products in the market to determine standalone selling prices for GenSure stationary backup power units and hydrogen fueling infrastructure. The determination of standalone selling prices of the Company's performance obligations requires significant judgment, including periodic assessment of pricing approaches and available observable evidence in the market. Once relative standalone selling prices are determined, the Company proportionately allocates the transaction price to each performance obligation within the customer arrangement based upon standalone selling price. The allocated transaction price related to fuel cell systems and spare parts is recognized as revenue at a point in time which usually occurs upon delivery (and occasionally at time of shipment). Revenue on hydrogen infrastructure installations is generally recognized at the point at which transfer of control passes to the customer, which usually occurs upon customer acceptance of the hydrogen infrastructure. The Company uses an input method to determine the amount of revenue to recognize during each reporting period when such revenue is recognized over time, based on the costs incurred to satisfy the performance obligation.

(ii) Sales of Electrolyzer Systems and Solutions

Revenue from sales of electrolyzer systems and solutions represents sales of electrolyzer stacks and systems used to generate hydrogen for various applications including mobility, ammonia production, methanol production, power to gas, and other uses.

The Company uses a variety of information sources in determining standalone selling prices for electrolyzer systems solutions. Electrolyzer stacks are typically sold on a standalone basis and the standalone selling price is the contractual price with the customer. Electrolyzer systems are sold either on a standalone basis or with an extended service agreement and other equipment. The Company uses an adjusted market assessment approach to determine the standalone selling price of electrolyzer systems when sold with extended service or other equipment. This includes considering both standalone selling prices of the systems by the Company and available information on competitor pricing on similar products. The determination of standalone selling prices of the Company's performance obligations requires judgment, including periodic assessment of pricing approaches and available observable evidence in the market. Once relative standalone selling prices are determined, the Company proportionately allocates the transaction price to each performance obligation within the customer arrangement based upon standalone selling price. Revenue on electrolyzer systems and stacks is generally recognized at the point at which transfer of control passes to the customer, which usually occurs upon

title transfer at shipment or delivery to the customer location. In certain instances, control of electrolyzer systems transfers to the customer over time, and the related revenue is recognized over time as the performance obligation is satisfied. We recognize revenue over time when contract performance results in the creation of a product for which we do not have an alternative use and the contract includes an enforceable right to payment in an amount that corresponds directly with the value of the performance completed. In these instances, we use an input measure (cost-to-total cost or percentage-of-completion method) of progress to determine the amount of revenue to recognize during each reporting period based on the costs incurred to satisfy the performance obligation.

Payments received from customers are recorded within deferred revenue and customer deposits in the consolidated balance sheets until control is transferred. The related cost of such product and installation is also deferred as a component of deferred cost of revenue in the consolidated balance sheets until control is transferred.

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

Revenue from services performed on fuel cell systems and related infrastructure represents revenue earned on our service and maintenance contracts and sales of spare parts. The Company uses an adjusted market assessment approach to determine standalone selling prices for services. This approach considers market conditions and constraints, as well as objectives while maximizing the use of available observable inputs obtained from a limited number of historical standalone service renewal prices and negotiations with customers. The transaction price allocated to services as discussed above is generally recognized as revenue over time on a straight-line basis over the expected service period, as customers simultaneously receive and consume the benefits of routine, recurring maintenance performed throughout the contract period.

In substantially all of its transactions, the Company sells extended maintenance contracts that generally provide for a five-to-ten-year service period from the date of product installation in exchange for an up-front payment. Services include monitoring, technical support, maintenance and related services. These services are accounted for as a separate performance obligation, and accordingly, revenue generated from these transactions, subject to the proportional allocation of transaction price, is deferred and recognized as revenue over the term of the contract, generally on a straight-line basis. Additionally, the Company may enter into annual service and extended maintenance contracts that are billed monthly. Revenue generated from these transactions is recognized as revenue on a straight-line basis over the term of the contract. Costs are recognized as incurred over the term of the contract. When costs are projected to exceed revenues over the life of the extended maintenance contract, an accrual for loss contracts is recorded. As of December 31, 2022 and 2021, the Company recorded a loss accrual of \$81.1 million and \$89.8 million, respectively. Costs are estimated based upon historical experience and consider the estimated impact of the Company's cost reduction initiatives, if any. The actual results may differ from these estimates. See "Extended Maintenance Contracts" below.

Extended maintenance contracts generally do not contain customer renewal options. Upon expiration, customers may either negotiate a contract extension or switch to purchasing spare parts and maintaining the fuel cell systems on their own.

(iv) Power Purchase Agreements ("PPAs")

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

Revenue associated with these agreements is recognized on a straight-line basis over the life of the agreements as the customers receive the benefits from the Company's performance of the services. The customers receive services ratably over the contract term.

In conjunction with entering into a PPA with a customer, the Company may enter into a separate transaction with third-party financial institutions in which the Company receives proceeds from the sale/leaseback transactions of the equipment and the sale of future service revenue. The proceeds from the financial institution are allocated between the sale of equipment and the sale of future service revenue based on the relative standalone selling prices of equipment and service. The proceeds allocated to the sale of future services are recognized as finance obligations. The proceeds allocated to the sale of the equipment are evaluated to determine if the transaction meets the criteria for sale/leaseback accounting. To meet the sale/leaseback criteria, control of the equipment must transfer to the financial institution, which requires among other criteria the leaseback to meet the criteria for an operating lease and the Company must not have a right to repurchase the equipment (unless specific criteria are met). These transactions typically meet the criteria for sale/leaseback

accounting and accordingly, the Company recognizes revenue on the sale of the equipment, and separately recognizes the leaseback obligations.

The Company recognizes an operating lease liability for the equipment leaseback obligation based on the present value of the future payments to the financial institutions that are attributed to the equipment leaseback. The discount rate used to determine the lease liability is the Company's incremental borrowing rate. The Company also records a right of use asset which is amortized over the term of the leaseback. Rental expense is recognized on a straight-line basis over the life of the leaseback and is included as a cost of PPA revenue on the consolidated statements of operations.

Certain of the Company's transactions with financial institutions do not meet the criteria for sale/leaseback accounting and accordingly, no equipment sale is recognized. All proceeds from these transactions are accounted for as finance obligations. The right of use assets related to these transactions are classified as equipment related to the PPAs and fuel delivered to the customers, net in the consolidated balance sheets. The Company uses its transaction-date incremental borrowing rate as the interest rate for its finance obligations that arise from these transactions. No additional adjustments to the incremental borrowing rate have been deemed necessary for the finance obligations that have resulted from the failed sale/leaseback transactions.

In determining whether the sales of fuel cells and other equipment to financial institutions meet the requirements for revenue recognition under sale/leaseback accounting, the Company, as lessee, determines the classification of the lease. The Company estimates certain key inputs to the associated calculations such as: 1) discount rate used to determine the present value of future lease payments, 2) fair value of the fuel cells and equipment, and 3) useful life of the underlying asset(s):

- ASC Topic 842 requires a lessee to discount its future lease payments using the interest rate implicit in the lease or, if that rate cannot be readily determined, its incremental borrowing rate. Generally, the Company cannot determine the interest rate implicit in its leases because it does not have access to the lessor's estimated residual value or the amount of the lessor's deferred initial direct costs. Therefore, the Company generally uses its incremental borrowing rate to estimate the discount rate for each lease. Adjustments that considered the Company's actual borrowing rate, inclusive of securitization, as well as borrowing rates for companies of similar credit quality were applied in the determination of the incremental borrowing rate.
- In order for the lease to be classified as an operating lease, the present value of the future lease payments cannot exceed 90% of the fair value of the leased assets. The Company estimates the fair value of the lease assets using the sales prices.
- In order for a lease to be classified as an operating lease, the lease term cannot exceed 75% (major part) of the estimated useful life of the leased asset. The average estimated useful life of the fuel cells is 10 years, and the average estimated useful life of the hydrogen infrastructure is 20 years. These estimated useful lives are compared to the term of each lease to determine the appropriate lease classification.

(v) Fuel Delivered to Customers

Revenue associated with fuel delivered to customers represents the sale of hydrogen to customers that has been purchased by the Company from a third party or generated on site. The stand-alone selling price is not estimated because it is sold separately and therefore directly observable.

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

Impairment of Long-Lived Assets

Property, equipment, leasehold improvements, and finite-lived intangible assets

Long-lived assets, such as property, equipment, leasehold improvements, and finite-lived intangible assets, are reviewed for impairment whenever events and circumstances indicate that the carrying amount of an asset may not be recoverable. If circumstances require a long-lived asset or asset group to be tested for impairment, the Company first

compares undiscounted cash flows expected to be generated by that asset or asset group to its carrying amount. If the carrying amount of the long-lived asset or asset group is not recoverable on an undiscounted cash flow basis, an impairment is recognized to the extent that the carrying amount exceeds its fair value. In making these determinations, the Company uses certain assumptions, including, but not limited to: (i) estimated fair value of the assets; and (ii) estimated, undiscounted future cash flows expected to be generated by these assets, which are based on additional assumptions such as asset utilization, length of service, the asset will be used in the Company's operations, and (iii) estimated residual values. Fair value is determined using various valuation techniques including discounted cash flow models, quoted market values and third-party independent appraisals, as considered necessary.

There was impairment of \$0.8 million and \$0 of property, equipment, leasehold improvements, or finite-lived intangible assets during the years ended December 31, 2022 and 2021, respectively.

PPA Executory Contract Considerations

We evaluate PPA assets on a quarterly basis to identify events or changes in circumstances ("triggering events") that indicate the carrying value of certain assets may not be recoverable. PPA assets that we evaluate include right of use lease assets, equipment deployed to our PPAs, and assets related primarily to our fuel delivery business.

Upon the occurrence of a triggering event, PPA assets are evaluated to determine if the carrying amounts are recoverable. The determination of recoverability is made based upon the estimated undiscounted future net cash flows of assets grouped at the lowest level for which there are identifiable cash flows independent of the cash flows of other groups. For operating assets, the Company has generally determined that the lowest level of identifiable cash flows is based on the customer sites. The assets related primarily to our fuel delivery business are considered to be their own asset group. The cash flows are estimated based on the remaining useful life of the primary asset within the asset group.

For assets related to our PPA agreements, we consider all underlying cash inflows related to our contract revenues and cash outflows relating to the costs incurred to service the PPAs. Our cash flow estimates used in the recoverability test, are based upon, among other things, historical results adjusted to reflect our best estimate of future cash flows and operating performance. Development of future cash flows also requires us to make assumptions and to apply judgment, including timing of future expected cash flows, future cost savings initiatives, and determining recovery values. Changes to our key assumptions related to future performance and other economic and market factors could adversely affect the outcome of our recoverability tests and cause more asset groups to be tested for impairment.

If the estimated undiscounted future net cash flows for a given asset group are less than the carrying amount of the related asset group, an impairment loss is determined by comparing the estimated fair value with the carrying amount of the asset group. The impairment loss is then allocated to the assets in the asset group based on the asset's relative carrying amounts. However, assets are not impaired below their then estimated fair values. Fair value is generally determined through various valuation techniques, including discounted cash flow models, quoted market values and third-party independent appraisals, as well as year-over-year trends in pricing of our new equipment and overall evaluation of our industry and market, as considered necessary. The Company considers these indicators with certain of its own internal indices and metrics in determining fair value in light of the nascent state of the Company's market and industry. The estimate of fair value represents our best estimates of these factors and is subject to variability. Changes to our key assumptions related to future performance and other economic and market factors could adversely affect our impairment evaluation.

The Company has determined that the assets deployed for certain PPA arrangements, as well as certain assets related to the delivery of fuel to customers, are not recoverable based on the undiscounted estimated future cash flows of the asset group, and an expense of \$4.4 million was recorded to the impairment of long-lived assets on the income statement. However, the estimated fair value of the assets in these asset groups equal or exceed the carrying amount of the assets or otherwise limit the amount of impairment that would have been recognized. The Company has identified the primary source of the losses for certain PPA arrangements to be the maintenance components of the PPA arrangements and the impact of customer warrant non-cash provisions. As the PPA arrangements are considered to be executory contracts and there is no specific accounting guidance that permits loss recognition for these revenue contracts, the Company has not recognized a provision for the expected future losses under these revenue arrangements. The Company expects that it will recognize future losses for these arrangements as it continues its efforts to reduce costs of delivering the maintenance component of these arrangements. The Company has estimated total future revenues and costs for these types of arrangements based on existing contracts and leverage of the related assets. For the future estimates, the Company

used service cost estimates for extended maintenance contracts and customer warrant provisions at rates consistent with experience to date. The terms for the underlying estimates vary but the average residual term on the existing contracts is 5 years.

Extended Maintenance Contracts

On a quarterly basis, we evaluate any potential losses related to our extended maintenance contracts for fuel cell systems and related infrastructure that has been sold. We measure loss accruals at the customer contract level. The expected revenues and expenses for these contracts include all applicable expected costs of providing services over the remaining term of the contracts and the related unearned net revenue. A loss is recognized if the sum of expected costs of providing services under the contract exceeds related unearned net revenue and is recorded as a provision for loss contracts related to service in the consolidated statements of operations. A key component of these estimates is the expected future service costs. In estimating the expected future service costs, the Company considers its current service cost level and applies judgement related to certain cost saving estimates that have been implemented in the field. The expected future cost savings will be primarily dependent upon the success of the Company's initiatives related to increasing stack life and achieving better economies of scale on service labor. If the expected cost saving initiatives are not realized, this will increase the costs of providing services and could adversely affect our estimated contract loss accrual. Further, as we continue to work to improve quality and reliability; however, unanticipated additional quality issues or warranty claims may arise and additional material charges may be incurred in the future. These quality issues could also adversely affect our contract loss accrual. The Company has undertaken and will soon undertake several other initiatives to extend the life and improve the reliability of its equipment. As a result of these initiatives and our additional expectation that the increase in certain costs will abate, the Company believes that its contract loss accrual is sufficient. However, if elevated service costs persist, the Company will adjust its estimated future service costs and increase its contract loss accrual estimate. If actual service costs over the remaining term of existing extended maintenance contracts are 10% more or 10% less than those estimated in the determination of the loss accrual for fuel cell systems and related infrastructure at December 31, 2022, the loss accrual would be approximately \$15.2 million higher or \$14.4 million lower, respectively.

Common Stock Warrant Accounting

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

Common stock warrants accounted for as equity instruments represent the warrants issued to Amazon and Walmart as discussed in Note 17, "Warrant Transaction Agreements." The Company adopted FASB ASU 2019-08, *Compensation – Stock Compensation* (Topic 718) and *Revenue from Contracts with Customers* (Topic 606), which requires entities to measure and classify share-based payment awards granted to a customer by applying the guidance under Topic 718, as of January 1, 2019.

In order to calculate warrant charges, the Company used the Black-Scholes pricing model, which required key inputs including volatility and risk-free interest rate and certain unobservable inputs for which there is little or no market data, requiring the Company to develop its own assumptions. The Company estimated the fair value of unvested warrants, considered to be probable of vesting, at the time. Based on that estimated fair value, the Company determined warrant charges, which are recorded as a reduction of revenue in the consolidated statement of operations.

Recent Accounting Pronouncements

Recently Adopted Accounting Pronouncements

In March 2020, ASU 2020-04, *Reference Rate Reform* (Topic 848): *Facilitation of the Effects of Reference Rate Reform on Financial Reporting*, was issued to provide temporary optional expedients and exceptions to the GAAP guidance on contract modifications and hedge accounting to ease the financial reporting burdens related to the expected market transition from the London Interbank Offered Rate (LIBOR) and other interbank offered rates to alternative reference rates. This update was effective starting March 12, 2020 and the Company may elect to apply the amendments prospectively through December 31, 2022. The adoption of this standard is not expected to have a material impact on the

Company's consolidated financial statements. During the fourth quarter of fiscal year 2022, the Company adopted the optional relief guidance provided under this ASU after modifying certain debt to update the reference rate from LIBOR to Secured Overnight Financing Rate (SOFR). This caused a temporary mismatch in our interest rate swap and debt for a period of time. The application of this expedient preserves the presentation of the derivatives consistent with past presentation.

In October of 2021, ASU No. 2021-08- *Business Combinations* (Topic 805): *Accounting for Contract Assets and Contract Liabilities from Contracts with Customers* was issued. The standard update provides an exception to the fair value measurement for revenue contracts acquired in a business combination. The Company has elected to early adopt the standards update as of the fourth quarter of 2021.

On January 1, 2021, we early adopted ASU No. 2020-06, *Debt — Debt with Conversion and Other Options* (Subtopic 470-20) and *Derivatives and Hedging — Contracts in Entity's Own Equity* (Subtopic 815-40) using the modified retrospective approach. Consequently, the Company's 3.75% Convertible Senior Notes due 2025 (the "3.75% Convertible Senior Notes") is now accounted for as a single liability measured at its amortized cost. This accounting change removed the impact of recognizing the equity component of the Company's convertible notes at issuance and the subsequent accounting impact of additional interest expense from debt discount amortization. Future interest expense of the convertible notes will be lower as a result of adoption of this guidance and net loss per share will be computed using the if-converted method for convertible instruments. The cumulative effect of the accounting change upon adoption on January 1, 2021 increased the carrying amount of the 3.75% Convertible Senior Notes by \$120.6 million, reduced accumulated deficit by \$9.6 million and reduced additional paid-in capital by \$130.2 million.

Recently Issued and Not Yet Adopted Accounting Pronouncements

In March 2020, ASU 2020-03, *Codification Improvements to Financial Instruments*, was issued to make various codification improvements to financial instruments to make the standards easier to understand and apply by eliminating inconsistencies and providing clarifications. This update will be effective at various dates beginning with date of issuance of this ASU. The adoption of this standard will not have a material impact on the Company's consolidated financial statements.

Item 7A. Quantitative and Qualitative Disclosures about Market Risk

Equity Risk

As of December 31, 2022, the Company is exposed to market risk with respect to our portfolio of marketable securities with a fair value of \$134.8 million. These securities are exposed to market volatilities, changes in price and interest rates.

Credit Risk

As of December 31, 2022 and 2021, our cash and cash equivalents were maintained with financial institutions in which our current deposits are in excess of insured limits. We believe these institutions have sufficient assets and liquidity to conduct its operations in the ordinary course of business with little or no credit risk to us.

Interest Rate Risk

The risk associated with fluctuating interest rates is primarily limited to our cash equivalents and available-for-sale securities. We do not utilize derivative financial instruments, derivative commodity instruments or other market risk sensitive instruments, positions or transactions in any material fashion, except for the 5.5% Notes Capped Call and the 3.75% Notes Capped Call purchased in March 2018 and May 2020, respectively, related to the issuance of the 5.5% Convertible Senior Notes and 3.75% Convertible Senior Notes. Additionally, the Company purchased a Common Stock Forward in March 2018 in conjunction with the issuance of the 5.5% Convertible Senior Notes. That Common Stock Forward was extended upon issuance of the 3.75% Convertible Senior Notes.

Foreign Currency Exchange Rate Risk

Portions of our revenue and operating expenses that are incurred outside the United States are denominated in foreign currencies and are subject to fluctuations due to changes in foreign currency exchange rates, particularly changes in the Euro. Our exposure to changes in foreign currency rates is primarily related to operations of Plug Power Europe, our French subsidiary, that develops and sells hydrogen fuel cell systems for the European material handling market. Additionally, our wholly-owned subsidiary, Frames, is headquartered in the Netherlands. Fluctuations in foreign currency exchange rates may cause us to recognize transaction gains and losses in our statements of operations and comprehensive loss. We also have three joint ventures (1) an investment in HyVia, a joint venture with Renault that plans to manufacture and sell FCELCVs and to supply hydrogen fuel and fueling stations to support the FCE-LCV market primarily in Europe, (2) an investment in AccionaPlug S.L., a joint venture with Acciona, and (3) an investment in SK Hyverse, a joint venture with SK E&S. Our exposure to foreign currency can give rise to foreign exchange risk resulting from our equity method investments with HyVia and Acciona, which both operate in Europe, and SK Hyverse which operates in Asia. Our HyVia, AccionaPlug S.L. and SK Hyverse exposure presently is immaterial as we have not yet commenced commercial activities.

Inflation Risk

Inflationary factors, such as increases in our cost of goods sold and operating expenses, may adversely affect our operating results. Although we do not believe that inflation has had a material impact on our financial position or results of operations to date, a high rate of inflation in the future may have an adverse effect on our ability to maintain and increase our gross margin and selling and marketing and operating expenses as a percentage of our revenue if the selling prices of our products do not increase as much as or more than these increased costs.

Item 8. Financial Statements and Supplementary Data

The Company's consolidated financial statements and related notes, together with the report of independent registered public accounting firm, appear at pages F-1 through F-62 of this Annual Report on Form 10-K for the year ended December 31, 2022 and are incorporated by reference in this Item 8.

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

None.

Item 9A. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

We maintain disclosure controls and procedures that are designed to ensure that information required to be disclosed in our reports that we file or submit under the Exchange Act, are recorded, processed, summarized and reported within the time periods specified in SEC rules and forms, and that such information is accumulated and communicated to our management, including our Chief Executive Officer (our principal executive officer) and Chief Financial Officer (our principal financial officer) as appropriate, to allow for timely decisions regarding required disclosure.

Our management, with the participation of our Chief Executive Officer and Chief Financial Officer, has evaluated the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act), as of December 31, 2022. Based on such evaluation, our Chief Executive Officer and Chief Financial Officer have concluded that as of December 31, 2022, our disclosure controls and procedures were not effective because of material weaknesses in internal control over financial reporting described below.

Notwithstanding such material weaknesses in internal control over financial reporting, our management, including our Chief Executive Officer and Chief Financial Officer, has concluded that our consolidated balance sheets as of December 31, 2022 and 2021, the related consolidated statements of operations, comprehensive loss, stockholders' equity (deficit), and cash flows for each of years in the three-year period ended December 31, 2022, present fairly, in all material respects, our financial position, results of our operations and our cash flows for the periods presented in this Annual Report on Form 10-K, in conformity with GAAP.

Previously disclosed material weaknesses

During fiscal years 2021 and 2022, with the oversight of the Audit Committee of the Board of Directors, the Company began implementing a remediation plan to address the material weaknesses identified as of December 31, 2021. The Company expanded its finance and accounting team, including hiring a number of additional individuals with the requisite technical accounting and finance knowledge and experience to assist with the enhancement and implementation of internal control policies and procedures related to the accounting matters in our business.

As dedicated resources have been onboarded to address the previously disclosed material weaknesses, we are now able to conduct an effective risk assessment process that is responsive to changes in the Company's operating environment and business. These dedicated resources have allowed us to implement enhanced process-level controls around the accounting for the a) presentation of operating expenses; b) accrual for loss contracts related to service; c) identification of adjustments to physical inventory; and d) proper capitalization of inventory costs. Lastly, due to the additional information technology resources hired, we were able to implement certain general information technology controls over our information technology system used in calculating fuel billings. Management has determined that these enhancements to our risk management process, and enhancements to certain process-level controls and information technology controls, are operating effectively and consider the risk management process, process-level and general information technology material weaknesses identified in the prior year to be remediated as of December 31, 2022.

Despite the progress discussed above, during 2021 and 2022 there were several matters that hindered our ability to fully remediate all of the material weaknesses that were identified in the prior year. These include:

- a) We completed the acquisition of four private companies for approximately \$400 million, with the two largest acquisitions completed late in 2021, and have established four new joint ventures. Some of the acquisitions and the joint ventures include an international footprint. These activities have resulted in delays in implementing certain control activities on a consistent basis across all of our subsidiaries.
- b) We experienced significant growth in our market offerings, geographic footprint, and our business operations, which has resulted in an increase in the volume of complex and non-routine transactions that require additional specialized technical accounting resources that we were not able to source in a timely manner;
- c) The onboarding of over 60 accounting and finance personnel since March of 2021 to address the prior year material weaknesses resulted in delays in the timeliness of executing controls, or controls activities were performed without sufficiently documented supporting evidence of their operating effectiveness. We believe that these added resources and the implementation of newly designed controls require additional time to demonstrate operating effectiveness; and
- d) Given the growth and increased complexity in our company and markets discussed above, we experienced delays in control testing that negatively impacted the timing of identifying deficiencies, limiting management's ability to provide appropriate oversight, monitoring and enforcement of corrective actions.

While we believe that our efforts have improved our internal control over financial reporting and resulted in the remediation of certain of the material weaknesses identified as of December 31, 2021, remediation of the material weaknesses as of December 31, 2022, will require further validation and testing of the design and operating effectiveness of internal controls over a sustained period of financial reporting cycles.

Management's Report on Internal Control

Management is responsible for establishing and maintaining adequate internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act). Our internal control over financial reporting includes controls and procedures designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external reporting purposes in accordance with GAAP.

The Company's management, with the participation of our Chief Executive Officer and Chief Financial Officer, under the oversight of our Board, conducted an evaluation of the effectiveness of our internal control over financial

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reporting as of December 31, 2022, based on the criteria established in Internal Control -- Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO"). Based on this evaluation, management determined, based upon the existence of the material weaknesses described below, that we did not maintain effective internal control over financial reporting.

The Company acquired Joule Processing LLC, Alloy Custom Products, LLC and WesMor Cryogenics, LLC (together, the "Acquired Companies") during 2022, and management excluded from its assessment of the effectiveness of the Company's internal control over financial reporting as of December 31, 2022, the internal controls of the Acquired Companies, which represent total assets of \$113.1 million (or 2.1% of our total assets exclusive of acquired intangible assets and goodwill) and total revenues of \$40.2 million (or 5.7% of our consolidated revenues) included in the consolidated financial statements of the Company as of and for the year ended December 31, 2022.

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

A material weakness is a deficiency, or a combination of deficiencies, in internal control over financial reporting such that there is a reasonable possibility that a material misstatement of our annual or interim financial statements will not be prevented or detected on a timely basis.

The Company has determined certain material weaknesses exist as of December 31, 2022, in three components of internal control based on criteria established in the COSO framework.

The Company has identified a deficiency in one of the principles associated with the Control Environment component of the COSO framework, specifically relating to a lack of a sufficient complement of qualified technical accounting and financial reporting personnel to perform control activities surrounding complex and non-routine transactions.

Because of the need for additional technical accounting resources, the Company also identified a deficiency in the principles associated with the Control Activities component of the COSO framework, specifically relating to design and deploying control activities through internal control policies that establish what is expected and procedures that put policies into action. Additionally, management identified a deficiency in one of the principles associated with the Monitoring component of the COSO framework, specifically relating to selecting, developing, and performing ongoing evaluation to ascertain whether the components of internal controls are present and functioning.

The above control deficiencies constitute material weaknesses, either individually or in the aggregate.

The Company's independent registered public accounting firm, Deloitte & Touche LLP, who audited the consolidated financial statements included in this Annual Report on Form 10-K issued an adverse opinion on the effectiveness of the Company's internal control over financial reporting. Deloitte & Touche LLP's report appears is included herein.

2023 Remediation Plans

Management's remediation plan to address the control deficiencies existing as of December 31, 2022, includes the following:

- Continuing to hire qualified technical accounting and financial reporting personnel with public company experience to perform control activities surrounding complex and non-routine transactions;
- The Company will continue the process of implementing or enhancing control activities for our acquired companies;

- The Company will enhance the design of its controls over non-routine, complex transactions, and control activities that involve the use of third parties;
- During the second quarter of 2022, the Company hired an Internal Audit Director, with experience in testing internal control over financial reporting process, who will be implementing an annual audit plan that includes monitoring and operation of internal controls, and addressing control deficiencies. The Company plans to hire additional internal audit resources with auditing internal controls to assist with the monitoring of control activities; and
- We started the process to implement a new ERP system which will provide a stronger internal control infrastructure for financial reporting and for our internal control procedures.

As we continue to evaluate and work to remediate the control deficiencies that gave rise to the material weaknesses, we may determine that additional measures or time are required to address the control deficiencies or that we need to modify or otherwise adjust the remediation measures described above. We will continue to assess the effectiveness of our remediation efforts in connection with our evaluation of our internal control over financial reporting.

Changes in Internal Control over Financial Reporting

Except for the identification of the material weaknesses described above and the remediation of certain of the material weaknesses that existed as of December 31, 2021, there were no changes during the quarter ended December 31, 2022 in our internal control over financial reporting that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the stockholders and the Board of Directors of Plug Power Inc.

Opinion on Internal Control over Financial Reporting

We have audited the internal control over financial reporting of Plug Power Inc, and subsidiaries (the “Company”) as of December 31, 2022, based on criteria established in *Internal Control — Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). In our opinion, because of the effect of the material weaknesses identified below on the achievement of the objectives of the control criteria, the Company has not maintained effective internal control over financial reporting as of December 31, 2022, based on criteria established in *Internal Control — Integrated Framework (2013)* issued by COSO.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated financial statements as of and for the year ended December 31, 2022, of the Company and our report dated March 1, 2023, expressed an unqualified opinion on those financial statements.

As described in Management’s Report on Internal Control Over Financial Reporting, management excluded from its assessment the internal control over financial reporting at Joule Processing LLC, Alloy Custom Products, LLC and WesMor Cryogenics, LLC which were acquired during 2022, and whose financial statements constitutes 2.1% of total assets, 5.7% of revenues of the consolidated financial statements as of and for the year ended December 31, 2022. Accordingly, our audit did not include the internal control over financial reporting at Joule Processing LLC, Alloy Custom Products, LLC and WesMor Cryogenics, LLC.

Basis for Opinion

The Company’s management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management’s Report on Internal Control. Our responsibility is to express an opinion on the Company’s internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control over Financial Reporting

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

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

Material Weaknesses

A material weakness is a deficiency, or a combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of the company's annual or interim financial statements will not be prevented or detected on a timely basis. The following material weaknesses have been identified and included in management's assessment: a deficiency in the principle associated with the control environment component of the COSO framework which, either individually or in the aggregate, constitute a material weakness relating to a lack of a sufficient complement of qualified technical accounting and financial reporting personnel to perform control activities surrounding complex and non-routine transactions. In addition, deficiencies in the principles associated with the control activities component of the COSO framework, which, either individually or in the aggregate, constitute a material weakness relating to the design and deployment of control activities through internal control policies that establish what is expected and procedures that put policies into action. In addition, a deficiency in a principle associated with the monitoring component of the COSO framework, which, either individually or in the aggregate, constitute a material weakness relating to selecting, developing, and performing ongoing evaluation to ascertain whether the components of internal controls are present and functioning. These material weaknesses were considered in determining the nature, timing, and extent of audit tests applied in our audit of the consolidated financial statements as of and for the year ended December 31, 2022, of the Company, and this report does not affect our report on such financial statements.

/s/ Deloitte & Touche LLP

Rochester, NY

March 1, 2023

Item 9B. Other Information

On February 28, 2023, the Board of Directors (the “Board”) of the Company, in connection with the new SEC rules and changes to the Exchange Act, regarding universal proxy cards, certain recent changes to the Delaware General Corporation Law (the “DGCL”), and a periodic review of corporate governance matters, approved and adopted amended and restated bylaws of the Company (as so amended and restated, the “Fifth Amended and Restated Bylaws”), effective as of such date.

The Fifth Amended and Restated Bylaws, among other things:

- Clarify that the Board may determine that a meeting of stockholders may be conducted solely by means of remote communication. (Article I, Section 1)
- Address matters relating to Rule 14a-19 under the Exchange Act (the “Universal Proxy Rules”), including requiring: (a) the stockholder’s nomination notice to include a representation that it intends to solicit proxies from stockholders representing at least 67% of the voting power of shares entitled to vote on the election of directors; (b) the stockholder to comply with the Universal Proxy Rules and provide reasonable evidence thereof prior to the stockholder meeting; and (c) the stockholder to use a proxy card color other than white, which is reserved for the exclusive use of the Board. (Article I, Sections 2 and 6)
- Enhance the informational and procedural requirements in connection with stockholder proposals and stockholder director nominations, including: (a) requiring additional information about the stockholder making the director nomination or proposal; (b) requiring additional information about the stockholder proposed business and/or director nominee; and (c) providing that the number of nominees a stockholder may nominate for election at the annual meeting of the stockholders may not exceed the number of directors to be elected at such annual meeting. (Article I, Section 2)
- Modify the provisions relating to adjournment procedures and availability of lists of stockholders entitled to vote at stockholder meetings, in each case, to reflect recent amendments to the DGCL. (Article I, Sections 4 and 8)
- Provide that any proxies received for disqualified or withdrawn Board nominees will be treated as abstentions. (Article I, Section 6)
- Clarify the powers of the chair of a stockholder meeting, including with respect to the chair’s ability to prescribe rules and regulations for the conduct of the meeting. (Article I, Section 9)
- Clarify the manner in which vacancies on the Board may be filled. (Article II, Section 4)
- Establish that the Board may designate a presiding director who presides over Board meetings. (Article II, Section 14)
- Provide that the Board (or a committee thereof) may fix the compensation of the Company’s officers and that any one person may hold any number of officer roles. (Article III, Section 1)
- Amend the director resignation and removal provisions to grant the Board authority with respect to compensation following a resignation or removal. (Article III, Section 5)
- Provide that the Company may enter into stock transfer agreements, as permitted by the DGCL. (Article IV, Section 3)
- Modify the provisions related to the indemnification of directors and officers, including the permissibility of advancement of expenses and the contractual nature of indemnification. (Article V)
- Clarify that the Board determines the Company’s fiscal year. (Article VI, Section 1)
- Add a federal forum provision to designate the federal district courts as the exclusive forum for matters arising under the Securities Act of 1933, as amended, and the Exchange Act. (Article VI, Section 8)
- Make various other updates, including ministerial and conforming changes and changes to clarify the Company’s ability to conduct business by means of remote communication.

The foregoing description of the Fifth Amended and Restated Bylaws is qualified in its entirety by the full text of the Fifth Amended and Restated Bylaws filed as *Exhibit 3.9* hereto and incorporated herein by reference.

Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections

Not applicable.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

The information required under this item is incorporated herein by reference from the Company's definitive proxy statement pursuant to Regulation 14A, which proxy statement will be filed with Securities and Exchange Commission not later than 120 days after the close of the Company's fiscal year ended December 31, 2022.

Code of Conduct

We have adopted a code of conduct applicable to all of our directors, officers and employees, including our principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions. Our code of conduct is a "code of ethics" as defined in Item 406(b) of Regulation S-K and embodies our principles and practices relating to the ethical conduct of our business and our long-standing commitment to honesty, fair dealing and full compliance with all laws affecting our business. In the event that we amend or waive certain provisions of our code of conduct in a manner that requires disclosure under applicable rules, we intend to provide such required disclosure on our website in accordance with applicable SEC and NASDAQ Rules. Our code of ethics is available on our website at www.plugpower.com under Investor Relations — Governance — Governance Documents — Code of Conduct. Our website is not incorporated into or a part of this Annual Report on Form 10-K.

Item 11. Executive Compensation

The information required under this item is incorporated herein by reference from the Company's definitive proxy statement pursuant to Regulation 14A, which proxy statement will be filed with Securities and Exchange Commission not later than 120 days after the close of the Company's fiscal year ended December 31, 2022.

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

Except for the information regarding securities authorized for issuance under equity compensation plans (which is set forth below), the information required under this item is incorporated herein by reference from the Company's definitive proxy statement pursuant to Regulation 14A, which proxy statement will be filed with Securities and Exchange Commission not later than 120 days after the close of the Company's fiscal year ended December 31, 2022.

Securities Authorized for Issuance Under Equity Compensation Plans

The following table gives information, as of December 31, 2022, about the shares of our common stock that may be issued upon the exercise of options and restricted stock under the Company's 2021 Stock Option and Incentive Plan, as amended, (the "2021 Stock Option Plan"):

Plan Category	Number of shares to be issued upon exercise of outstanding options, warrants and rights (a)	Weighted average exercise price of outstanding options, warrants and rights (b) (1)	Number of shares remaining for future issuance under equity compensation plans (excluding shares reflected in column (a)) (c)
Equity compensation plans approved by security holders	26,830,251 (2)	\$ 17.76	13,218,775
Equity compensation plans not approved by security holders	768,018 (3)	\$ 4.26	—
Total	27,598,269		13,218,775

(1) The weighted-average exercise price is calculated solely based on outstanding options.

(2) Represents 19,851,548 shares underlying outstanding options issued under the 2021 Stock Option Plan and 6,978,703 shares underlying outstanding options issued under the 2011 Stock Option Plan. The amounts reported in the table do not include 4,837,722 shares of restricted stock granted under the 2021 Stock Option Plan and 1,351,987 shares of restricted stock granted under the 2011 Stock Option Plan.

- (3) Included in equity compensation plans not approved by stockholders are shares granted to new employees for key positions within the Company. No specific shares have been allocated for this purpose, but rather equity awards are approved by the Company's Board of Directors in specific circumstances.

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

The information required under this item is incorporated herein by reference from the Company's definitive proxy statement pursuant to Regulation 14A, which proxy statement will be filed with Securities and Exchange Commission not later than 120 days after the close of the Company's fiscal year ended December 31, 2022.

Item 14. Principal Accounting Fees and Services

Our independent public accounting firm is Deloitte & Touche LLP, Rochester, New York, United States, PCAOB Audit ID 34.

The information required under this item is incorporated herein by reference from the Company's definitive proxy statement pursuant to Regulation 14A, which proxy statement will be filed with Securities and Exchange Commission not later than 120 days after the close of the Company's fiscal year ended December 31, 2022.

PART IV

Item 15. Exhibits and Financial Statement Schedules

15(a)(1) Financial Statements

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

15(a)(2) Financial Statement Schedules

Schedules have been omitted as they are not applicable, or the required information or equivalent information has been included in the Consolidated Financial Statements or the notes thereto.

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15(a)(3) Exhibits

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

Exhibit No.	Description
2.1	Agreement and Plan of Merger, dated June 22, 2020, by and among Plug Power Inc., Giner ELX, Inc., Giner ELX Sub, LLC, Giner ELX Merger Sub, Inc. and Giner, Inc., as the representative of the stockholders of Giner ELX, Inc. (filed as Exhibit 2.1 to Plug Power Inc.'s Current Report on Form 8-K filed on June 23, 2020 and incorporated by reference herein)
2.2	Agreement and Plan of Merger, dated June 18, 2020, by and among Plug Power Hydrogen Holdings, Inc., UHG Merger Sub, Inc., United Hydrogen Group Inc. and Vladimir Prerad, as the representative of the stockholders of United Hydrogen Group Inc. (filed as Exhibit 2.2 to Plug Power Inc.'s Current Report on Form 8-K filed on June 23, 2020 and incorporated by reference herein)
3.1	Amended and Restated Certificate of Incorporation of Plug Power Inc. (filed as Exhibit 3.1 to Plug Power Inc.'s Annual Report on Form 10-K for the year ended December 31, 2008 and incorporated by reference herein)
3.2	Certificate of Amendment to Amended and Restated Certificate of Incorporation of Plug Power Inc. (filed as Exhibit 3.3 to Plug Power Inc.'s Annual Report on Form 10-K for the year ended December 31, 2008 and incorporated by reference herein)
3.3	Second Certificate of Amendment of Amended and Restated Certificate of Incorporation of Plug Power Inc. (filed as Exhibit 3.1 to Plug Power Inc.'s Current Report on Form 8-K filed on May 19, 2011 and incorporated by reference herein)
3.4	Third Certificate of Amendment of Amended and Restated Certificate of Incorporation of Plug Power Inc. (filed as Exhibit 3.1 to Plug Power Inc.'s Current Report on Form 8-K filed on July 25, 2014 and incorporated by reference herein)
3.5	Certificate of Correction to Third Certificate of Amendment of Amended and Restated Certificate of Incorporation of Plug Power Inc. (filed as Exhibit 3.9 to Plug Power Inc.'s Annual Report on Form 10-K for the year ended December 31, 2016 and incorporated by reference herein)
3.6	Fourth Certificate of Amendment of Amended and Restated Certificate of Incorporation of Plug Power Inc. (filed as Exhibit 3.1 to Plug Power Inc.'s Current Report on Form 8-K filed on June 30, 2017 and incorporated by reference herein)
3.7	Fifth Certificate of Amendment of Amended and Restated Certificate of Incorporation of Plug Power Inc. (filed as Exhibit 3.7 to Plug Power Inc.'s Quarterly Report on Form 10-Q filed on August 5, 2021 and incorporated by reference herein)
3.8	Certificate of Designations, Preferences and Rights of a Series of Preferred Stock of Plug Power Inc. classifying and designating the Series A Junior Participating Cumulative Preferred Stock. (filed as Exhibit 3.1 to Plug Power Inc.'s Registration Statement on Form 8-A filed on June 24, 2009 and incorporated by reference herein)
3.9*	Fifth Amended and Restated Bylaws of Plug Power Inc.
4.1	Specimen certificate for shares of common stock, \$.01 par value, of Plug Power Inc. (filed as Exhibit 4.1 to Plug Power Inc.'s Registration Statement on Form S-1 (File Number 333-86089) and incorporated by reference herein)

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Exhibit No.	Description
4.2	<u>Indenture, dated as of May 18, 2020, between Plug Power Inc. and Wilmington Trust, National Association (filed as Exhibit 4.1 to Plug Power Inc.'s Current Report on Form 8-K filed on May 19, 2020 and incorporated by reference herein).</u>
4.3	<u>Form of 3.75% Convertible Senior Notes due June 1, 2025 (filed as Exhibit 4.1 to Plug Power Inc.'s Current Report on Form 8-K filed on May 19, 2020 and incorporated by reference herein).</u>
4.4	<u>Warrant to Purchase Common Stock, issued April 4, 2017, between Plug Power Inc. and Amazon.com NV Investment Holdings LLC (filed as Exhibit 4.1 to Plug Power Inc.'s Current Report on Form 8-K filed on April 5, 2017 and incorporated by reference herein).</u>
4.5	<u>Warrant to Purchase Common Stock, issued July 20, 2017, between Plug Power Inc. and Wal-Mart Stores, Inc. (filed as Exhibit 4.1 to Plug Power Inc.'s Current Report on Form 8-K filed on July 21, 2017 and incorporated by reference herein).</u>
4.6	<u>Warrant to Purchase Common Stock, issued August 24, 2022, between Plug Power Inc. and Amazon.com NV Investment Holdings LLC (filed as Exhibit 4.1 to Plug Power Inc.'s Current Report on Form 8-K filed August 25, 2022 and incorporated by reference herein).</u>
4.7	<u>Description of the Registrant's securities registered under Section 12 of the Securities Exchange Act of 1934 (filed as Exhibit 4.6 to Plug Power Inc.'s Annual Report on Form 10-K filed on May 14, 2021 and incorporated by reference herein).</u>
10.1#	<u>Employee Stock Purchase Plan (filed as Exhibit 10.34 to Plug Power Inc.'s Registration Statement on Form S-1 (File Number 333-86089) and incorporated by reference herein).</u>
10.2#	<u>Form of Director Indemnification Agreement (filed as Exhibit 10.2 to Plug Power Inc.'s Annual Report on Form 10-K filed on May 14, 2021 and incorporated by reference herein).</u>
10.3#	<u>Form of Officer Indemnification Agreement (filed as Exhibit 10.3 to Plug Power Inc.'s Annual Report on Form 10-K filed on May 14, 2021 and incorporated by reference herein).</u>
10.4#	<u>Employment Agreement, dated as of April 7, 2008, between Andrew Marsh and Plug Power Inc. (filed as Exhibit 10.1 to Plug Power Inc.'s Current Report on Form 8-K filed on April 7, 2008 and incorporated by reference herein).</u>
10.5#	<u>Executive Employment Agreement, dated as of May 5, 2008, between Gerard L. Conway, Jr. and Plug Power Inc. (filed as Exhibit 10.1 to Plug Power Inc.'s Quarterly Report on Form 10-Q filed on August 7, 2008 and incorporated by reference herein).</u>
10.6#	<u>Executive Employment Agreement, dated as of October 23, 2013, between Keith C. Schmid and Plug Power Inc. (filed as Exhibit 99.2 to Plug Power Inc.'s Current Report on Form 8-K filed on October 29, 2013 and incorporated by reference herein).</u>
10.7#	<u>Executive Employment Agreement, dated as of November 6, 2014, between Paul B. Middleton and Plug Power Inc. (filed as Exhibit 99.2 to Plug Power Inc.'s Current Report on Form 8-K filed on November 12, 2014 and incorporated by reference herein).</u>
10.8#	<u>Executive Employment Agreement, dated as of April 16, 2019, between Sanjay Shrestha and Plug Power Inc. (filed as Exhibit 10.1 to Plug Power Inc.'s Quarterly Report on Form 10-Q filed on May 9, 2022 and incorporated by reference herein).</u>

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Exhibit No.	Description
10.9#	<u>Executive Employment Agreement, dated as of December 28, 2021, between Jose Luis Crespo and Plug Power Inc. (filed as Exhibit 10.8 to Plug Power Inc.'s Annual Report on Form 10-K filed on March 1, 2022 and incorporated by reference herein).</u>
10.10#*	<u>Executive Employment Agreement, dated as of June 1, 2021, between David Mindnich and Plug Power Inc.</u>
10.11#	<u>Executive Employment Agreement, dated as of December 7, 2020, between Dirk Ole Hoefelmann and Plug Power Inc. (filed as Exhibit 10.2 to Plug Power Inc.'s Quarterly Report on Form 10-Q filed on May 9, 2022 and incorporated by reference herein).</u>
10.12#	<u>Form of Non-Qualified Stock Option Agreement for Company Employees (filed as Exhibit 10.9 to Plug Power Inc.'s Annual Report on Form 10-K filed on March 1, 2022 and incorporated by reference herein).</u>
10.13#	<u>Form of Non-Qualified Stock Option Agreement for Non-Employee Directors (filed as Exhibit 10.10 to Plug Power Inc.'s Annual Report on Form 10-K filed on March 1, 2022 and incorporated by reference herein).</u>
10.14#	<u>Form of Non-Qualified Stock Option Agreement for Non-U.S. Optionees (filed as Exhibit 10.2 to Plug Power Inc.'s Quarterly Report on Form 10-Q filed on November 8, 2022 and incorporated by reference herein).</u>
10.15#	<u>Form of Restricted Stock Award Agreement for Company Employees (filed as Exhibit 10.11 to Plug Power Inc.'s Annual Report on Form 10-K filed on March 1, 2022 and incorporated by reference herein).</u>
10.16#	<u>Form of Restricted Stock Award Agreement for Non-Employee Directors (filed as Exhibit 10.12 to Plug Power Inc.'s Annual Report on Form 10-K filed on March 1, 2022 and incorporated by reference herein).</u>
10.17#	<u>Form of Restricted Stock Unit Award Agreement for Non-U.S. Grantees (filed as Exhibit 10.2 to Plug Power Inc.'s Quarterly Report on Form 10-Q filed on November 8, 2022 and incorporated by reference herein).</u>
10.18#	<u>Form of Performance-Based Non-Qualified Stock Option Agreement for Executives Residing in the States of New York or New Jersey (filed as Exhibit 10.13 to Plug Power Inc.'s Annual Report on Form 10-K filed on March 1, 2022 and incorporated by reference herein).</u>
10.19#	<u>Form of Performance-Based Non-Qualified Stock Option Agreement for Chief Executive Officer (filed as Exhibit 10.14 to Plug Power Inc.'s Annual Report on Form 10-K filed on March 1, 2022 and incorporated by reference herein).</u>
10.20	<u>Purchase and Sale Agreement dated as of January 24, 2013, between Plug Power Inc. and 968 Albany Shaker Road Associates, LLC (filed as Exhibit 10.1 to Plug Power Inc.'s Current Report on Form 8-K filed on April 1, 2013 and incorporated by reference herein).</u>
10.21	<u>Amendment to Purchase and Sale Agreement dated as of March 13, 2013 between Plug Power Inc. and 968 Albany Shaker Road Associates, LLC (filed as Exhibit 10.2 to Plug Power Inc.'s Current Report on Form 8-K filed on April 1, 2013 and incorporated by reference herein).</u>
10.22	<u>Investor Agreement, dated as of February 24, 2021, between Plug Power Inc., Grove Energy Capital LLC, SK Holdings, Co., Ltd. and SK E&S Co., Ltd. (filed as Exhibit 10.1 to Plug Power Inc.'s Current Report on Form 8-K filed on February 25, 2021 and incorporated by reference herein).</u>
10.23	<u>Transaction Agreement, dated as of April 4, 2017, between Plug Power Inc. and Amazon.com, Inc. (filed as Exhibit 10.1 to Plug Power Inc.'s Current Report on Form 8-K filed on April 5, 2017 and incorporated by reference herein).</u>

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Exhibit No.	Description
10.24	Transaction Agreement, dated as of July 20, 2017, between Plug Power Inc. and Wal-Mart Stores, Inc. (filed as Exhibit 10.1 to Plug Power Inc.'s Current Report on Form 8-K filed on July 21, 2017 and incorporated by reference herein)
10.25	Transaction Agreement, dated as of August 24, 2022, between Plug Power Inc. and Amazon.com, Inc. (filed as Exhibit 10.1 to Plug Power Inc.'s Current Report on Form 8-K filed August 25, 2022 and incorporated by reference herein)
10.26	Master Lease Agreement, dated as of June 30, 2017, between Plug Power Inc. and Wells Fargo Equipment Finance, Inc. (filed as Exhibit 10.2 to Plug Power Inc.'s Current Report on Form 8-K filed on July 21, 2017 and incorporated by reference herein)
10.27	Base Call Option Confirmation, dated as of May 13, 2020, between Plug Power Inc. and Morgan Stanley & Co. LLC. (filed as Exhibit 10.1 to Plug Power Inc.'s Current Report on Form 8-K filed on May 19, 2020 and incorporated by reference herein)
10.28	Base Call Option Confirmation, dated as of May 13, 2020, between Plug Power Inc. and Wells Fargo Bank, National Association. (filed as Exhibit 10.2 to Plug Power Inc.'s Current Report on Form 8-K filed on May 19, 2020 and incorporated by reference herein)
10.29	Forward Stock Purchase Transaction Confirmation, dated as of March 22, 2018, between Plug Power Inc. and Morgan Stanley & Co. LLC (filed as Exhibit 10.1 to Plug Power Inc.'s Current Report on Form 8-K filed on March 28, 2018 and incorporated by reference herein)
10.30	Amendment to Forward Stock Purchase Transaction, dated as of May 13, 2020, between Plug Power Inc. and Morgan Stanley & Co. LLC. (filed as Exhibit 10.3 to Plug Power Inc.'s Current Report on Form 8-K filed on May 19, 2020 and incorporated by reference herein)
10.31	At Market Issuance Sales Agreement, dated April 13, 2020, by and between Plug Power Inc. and B. Riley FBR, Inc. (filed as Exhibit 1.1 to Plug Power Inc.'s Current Report on Form 8-K filed on April 13, 2020 and incorporated by reference herein)
10.32	First Amended and Restated Master Lease Agreement, dated as of July 30, 2018, between Plug Power Inc. and Wells Fargo Equipment Finance, Inc. (filed as Exhibit 10.4 to Plug Power Inc.'s Quarterly Report on Form 10-Q filed on May 8, 2019 and incorporated by reference herein)
10.33#	2021 Stock Option and Incentive Plan (filed as Appendix B to Plug Power Inc.'s Schedule 14A Proxy Statement filed on July 9, 2021 and incorporated by reference herein)
10.34#	Amendment No. 1 to the 2021 Stock Option and Incentive Plan (filed as Appendix A to Plug Power Inc.'s Schedule 14A Proxy Statement filed on May 2, 2022 and incorporated by reference herein)
10.35	Master Lease Agreement, dated as of April 10, 2019, between Plug Power Inc. and Wells Fargo Equipment Finance, Inc. (filed as Exhibit 10.31 to Plug Power Inc.'s Annual Report on Form 10-K filed on May 14, 2021 and incorporated by reference herein)
21.1*	List of Subsidiaries of Plug Power Inc.
23.1*	Consent of Deloitte & Touche LLP
23.2*	Consent of KPMG LLP
24.1*	Power of Attorney (incorporated by reference to the signature page of this Annual Report on Form 10-K)

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Exhibit No.	Description
31.1*	Rule 13a-14(a)/15d-14(a) Certification of Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
31.2*	Rule 13a-14(a)/15d-14(a) Certification of Chief Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
32.1**	Section 1350 Certification of Chief Executive Officer pursuant to Section 906 of the Sarbanes Oxley Act of 2002
32.2**	Section 1350 Certification of Chief Financial Officer pursuant to Section 906 of the Sarbanes Oxley Act of 2002
101.INS*	Inline XBRL Instance Document
101.SCH*	Inline XBRL Taxonomy Extension Schema Document
101.CAL*	Inline XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF*	Inline XBRL Taxonomy Extension Definition Linkbase Document
101.LAB*	Inline XBRL Taxonomy Extension Labels Linkbase Document
101.PRE*	Inline XBRL Taxonomy Extension Presentation Linkbase Document
104*	Cover Page Interactive Data File (embedded within the Inline XBRL document)

* Submitted electronically herewith.

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

** The certifications furnished in Exhibit 32 hereto are deemed to be furnished with this Annual Report on Form 10-K and will not be deemed to be “filed” for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, except to the extent that the registrant specifically incorporates it by reference.

Item 16. Form 10-K Summary

Not applicable.

POWER OF ATTORNEY

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

Date: March 1, 2023

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

<u>/s/ ANDREW MARSH</u> Andrew Marsh	President, Chief Executive Officer and Director (Principal Executive Officer)	March 1, 2023
<u>/s/ PAUL B. MIDDLETON</u> Paul B. Middleton	Chief Financial Officer (Principal Financial Officer)	March 1, 2023
<u>/s/ MARTIN D. HULL</u> Martin D. Hull	Controller & Chief Accounting Officer (Principal Accounting Officer)	March 1, 2023
<u>/s/ LUCAS P. SCHNEIDER</u> Lucas P. Schneider	Director	March 1, 2023
<u>/s/ MAUREEN O. HELMER</u> Maureen O. Helmer	Director	March 1, 2023
<u>/s/ JONATHAN M. SILVER</u> Jonathan M. Silver	Director	March 1, 2023
<u>/s/ GREGORY L. KENAUSIS</u> Gregory L. Kenausis	Director	March 1, 2023
<u>/s/ GEORGE C. MCNAMEE</u> George C. McNamee	Director	March 1, 2022
<u>/s/ JEAN A. BUA</u> Jean A. Bua	Director	March 1, 2023
<u>/s/ GARY K. WILLIS</u> Gary K. Willis	Director	March 1, 2023
<u>/s/ KYUNGYEOL SONG</u> Kyungyeol Song	Director	March 1, 2023
<u>/s/ KAVITA MAHTANI</u> Kavita Mahtani	Director	March 1, 2023

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the stockholders and the Board of Directors of Plug Power Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheet of Plug Power Inc. and subsidiaries (the "Company") as of December 31, 2022, the related consolidated statements of operations, comprehensive loss, stockholders' equity, and cash flows, for the period ended December 31, 2022, and the related notes (collectively referred to as the "financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2022 and the results of its operations and its cash flows for the period then ended, in conformity with accounting principles generally accepted in the United States of America.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2022, based on criteria established in Internal Control — Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated March 1, 2023 expressed an adverse opinion on the Company's internal control over financial reporting.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matters

The critical audit matters communicated below are matters arising from the current-period audit of the financial statements that were communicated or required to be communicated to the audit committee and that (1) relate to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the financial statements, taken as a whole, and we are not, by communicating the critical audit matters below, providing separate opinions on the critical audit matters or on the accounts or disclosures to which they relate.

Standalone Selling Price — Refer to Notes 2 and 18 of the financial statements

Critical Audit Matter Description

The Company's contracts with customers generally contain multiple performance obligations, and the total transaction price is allocated for purposes of recognizing revenue based on relative standalone selling prices. The Company estimates standalone selling prices for fuel cells and infrastructure by considering several inputs, including prices from a limited number of standalone sales as well as the Company's negotiations with customers. The Company also considers its costs to produce fuel cells as well as comparable list prices in estimating standalone selling prices. For services performed on fuel cells and infrastructure, the Company uses an adjusted market assessment approach that considers market conditions and constraints, pricing strategies and objectives while maximizing the use of available observable inputs obtained from a limited number of historical standalone service renewal prices and negotiations with customers. The Company recognized net revenue from the sales of fuel cells of \$207.7 million, sale of hydrogen infrastructure of \$141.5 million and sales of services of \$35.3 million for the year ended December 31, 2022.

We identified the evaluation of the sufficiency of audit evidence obtained related to the standalone selling prices for fuel cells and infrastructure and services as a critical audit matter. Significant auditor judgment was required to evaluate the appropriateness of the estimate of standalone selling prices for fuel cells, infrastructure, as well as services performed on fuel cells and infrastructure, because of the nature of the technology, its emerging market acceptance and the Company's limited history of selling these products and services on a standalone basis.

How the Critical Audit Matter Was Addressed in the Audit

Our audit procedures related to *Standalone Selling Price* included the following, among others:

- We obtained an understanding of the Company's process to estimate standalone selling prices by conducting a business process walkthrough. This included obtaining an understanding related to the assessment of the relevance and reliability of the inputs mentioned above.
- We performed sensitivity analyses of the significant assumptions used in the model to evaluate the change in standalone selling price resulting from changes in the significant assumptions.
- We applied auditor judgment to determine the nature and extent of procedures to be performed over standalone selling prices.
- We inquired of personnel to understand the Company's pricing strategies, negotiations with customers, and prices that customers are willing to pay for fuel cells and services.
- We evaluated the Company's estimates of standalone selling prices by comparing those estimates to supporting documentation, such as a selection of historical sales transactions, correspondence with customers, and industry research.
- We evaluated the accuracy and completeness of the data used by the Company by agreeing historical prices to executed sales transactions and to third-party information where applicable.
- We evaluated the sufficiency of audit evidence obtained over standalone selling prices by assessing the results of procedures performed, including the appropriateness of the nature of such evidence

Loss accrual for service contracts — Refer to Note 2 of the financial statements

The Company records an accrual for loss contracts if the sum of expected costs of providing maintenance services for fuel cell systems and related infrastructure exceeds the related unearned net revenues over the remaining contract term. The Company recorded an accrual for loss contracts of \$81.1 million as of December 31, 2022. Maintenance costs are estimated in determining the accrual for loss contracts based upon current service cost levels.

We identified the evaluation of maintenance cost projections in the accrual for loss contracts related to service as a critical audit matter. A high degree of auditor judgment was required to evaluate the expected remaining service costs required to fulfill the related customer maintenance contracts. Changes in the expected costs of providing maintenance services could have had a significant effect on the amount of the recorded accrual for loss contracts.

How the Critical Audit Matter Was Addressed in the Audit

Our audit procedures related to *Loss Accrual for Service Contracts* included the following, among others:

- We obtained an understanding of the Company's process to estimate the loss accrual for service contracts by conducting a business process walkthrough. This included obtaining an understanding related to the assessment of the relevance and reliability of the inputs mentioned above.
- We inquired of operational and financial personnel to understand the technical elements of the Company's expected future cost of providing maintenance services related to these service contracts.
- We obtained and agreed the projected revenue associated with loss contracts and evaluated the accuracy and completeness of the information.
- We obtained underlying documentation supporting the projected cost and compared the information to the Company's analysis of historical cost of providing maintenance services and evaluated the accuracy and completeness of the information.
- We recalculated the mathematical accuracy of the loss accrual for service contracts.
- We obtained the Company's analysis supporting the range of the possible loss accrual for service contracts, which was developed based on potential changes in assumptions.
- We performed sensitivity analyses to related to the historical cost information used to develop the estimate of future costs.

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/s/ Deloitte & Touche LLP

Rochester, NY

March 1, 2023

We have served as the Company's auditor since 2022.

Report of Independent Registered Public Accounting Firm

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

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheet of Plug Power Inc. and subsidiaries (the Company) as of December 31, 2021, the related consolidated statements of operations, comprehensive loss, stockholders' equity, and cash flows for each of the years in the two-year period ended December 31, 2021, and the related notes (collectively, the consolidated financial statements). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2021, and the results of its operations and its cash flows for each of the years in the two-year period ended December 31, 2021, in conformity with U.S. generally accepted accounting principles.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ KPMG LLP

We served as the Company's auditor from 2001 to 2022.

Albany, New York
March 1, 2022

PLUG POWER INC. AND SUBSIDIARIES

CONSOLIDATED BALANCE SHEETS

As of December 31, 2022 and 2021

(In thousands, except share and per share amounts)

	2022	2021
Assets		
Current assets:		
Cash and cash equivalents	\$ 690,630	\$ 2,481,269
Restricted cash	158,958	118,633
Available-for-sale securities, at fair value (amortized cost \$1,355,614 and allowance for credit losses of \$0 at December 31, 2022 and amortized cost \$1,242,933 and allowance for credit losses of \$0 at December 31, 2021)	1,332,943	1,240,265
Equity securities	134,836	147,995
Accounts receivable	129,450	92,675
Inventory	645,636	269,163
Contract assets	62,456	38,637
Prepaid expenses and other current assets	150,389	59,888
Total current assets	<u>3,305,298</u>	<u>4,448,525</u>
Restricted cash	699,756	532,292
Property, plant and equipment, net	719,793	255,623
Right of use assets related to finance leases, net	53,742	32,494
Right of use assets related to operating leases, net	360,287	212,537
Equipment related to power purchase agreements and fuel delivered to customers, net	89,293	72,902
Contract assets	41,831	120
Goodwill	248,607	220,436
Intangible assets, net	207,725	158,208
Investments in non-consolidated entities and non-marketable equity securities	31,250	12,892
Other assets	6,694	4,047
Total assets	<u>\$ 5,764,276</u>	<u>\$ 5,950,076</u>
Liabilities and Stockholders' Equity		
Current liabilities:		
Accounts payable	\$ 191,895	\$ 92,307
Accrued expenses	156,430	79,237
Deferred revenue and other contract liabilities	131,813	116,377
Operating lease liabilities	48,861	30,822
Finance lease liabilities	8,149	4,718
Finance obligations	58,925	42,040
Current portion of long-term debt	5,142	15,252
Contingent consideration, loss accrual for service contracts, and other current liabilities	34,060	39,800
Total current liabilities	<u>635,275</u>	<u>420,553</u>
Deferred revenue and other contract liabilities	98,085	66,713
Operating lease liabilities	271,504	175,635
Finance lease liabilities	37,988	24,611
Finance obligations	270,315	211,644
Convertible senior notes, net	193,919	192,633
Long-term debt	3,925	112,794
Contingent consideration, loss accrual for service contracts, and other liabilities	193,051	139,797
Total liabilities	<u>1,704,062</u>	<u>1,344,380</u>
Stockholders' equity:		
Common stock, \$0.01 par value per share; 1,500,000,000 shares authorized; Issued (including shares in treasury): 608,421,785 at December 31, 2022 and 594,729,610 at December 31, 2021	6,084	5,947
Additional paid-in capital	7,297,306	7,070,710
Accumulated other comprehensive loss	(26,004)	(1,532)
Accumulated deficit	(3,120,911)	(2,396,903)
Less common stock in treasury: 18,076,127 at December 31, 2022 and 17,074,710 at December 31, 2021	(96,261)	(72,526)
Total stockholders' equity	<u>4,060,214</u>	<u>4,605,696</u>
Total liabilities and stockholders' equity	<u>\$ 5,764,276</u>	<u>\$ 5,950,076</u>

See notes to consolidated financial statements.

PLUG POWER INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF OPERATIONS

For the years ended December 31, 2022, 2021 and 2020

(In thousands, except share and per share amounts)

	2022	2021	2020
Net revenue:			
Sales of fuel cell systems, related infrastructure and equipment	\$ 558,932	\$ 392,777	\$ (94,295)
Services performed on fuel cell systems and related infrastructure	35,280	26,706	(9,801)
Power purchase agreements	47,183	35,153	26,620
Fuel delivered to customers and related equipment	57,196	46,917	(16,072)
Other	2,849	789	311
Net revenue	701,440	502,342	(93,237)
Cost of revenue:			
Sales of fuel cell systems, related infrastructure and equipment	468,057	307,157	171,404
Services performed on fuel cell systems and related infrastructure	59,365	63,729	42,524
Provision for loss contracts related to service	26,801	71,988	35,473
Power purchase agreements	144,696	102,417	64,640
Fuel delivered to customers and related equipment	194,255	127,196	61,815
Other	2,622	1,165	323
Total cost of revenue	895,796	673,652	376,179
Gross loss	(194,356)	(171,310)	(469,416)
Operating expenses:			
Research and development	99,579	64,762	27,848
Selling, general and administrative	363,929	179,852	79,348
Impairment of long-lived assets	5,218	10,224	6,430
Change in fair value of contingent consideration	16,468	11,176	1,160
Total operating expenses	485,194	266,014	114,786
Operating loss	(679,550)	(437,324)	(584,202)
Interest income	37,259	4,040	765
Interest expense	(39,037)	(43,225)	(60,510)
Other expense, net	(2,303)	(765)	(739)
Realized loss on investments, net	(1,395)	(81)	—
Change in fair value of equity securities	(18,159)	6,738	—
Gain/(loss) on extinguishment of debt	(986)	—	17,686
Loss on equity method investments	(20,166)	(5,704)	—
Other gain	1,168	159	—
Loss before income taxes	\$ (723,169)	\$ (476,162)	\$ (627,000)
Income tax expense/(benefit)	839	(16,197)	(30,845)
Net loss attributable to the Company	\$ (724,008)	\$ (459,965)	\$ (596,155)
Preferred stock dividends declared	—	—	(26)
Net loss attributable to common stockholders	(724,008)	(459,965)	(596,181)
Net loss per share:			
Basic and diluted	\$ (1.25)	\$ (0.82)	\$ (1.68)
Weighted average number of common stock outstanding	579,716,708	558,182,177	354,790,106

See notes to consolidated financial statements.

PLUG POWER INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS

For the years ended December 31, 2022, 2021 and 2020

(In thousands)

	<u>2022</u>	<u>2021</u>	<u>2020</u>
Net loss attributable to the Company	\$ (724,008)	\$ (459,965)	\$ (596,155)
Other comprehensive (loss)/gain:			
Foreign currency translation (loss)/gain	(4,468)	(1,315)	1,163
Change in net unrealized loss on available-for-sale securities	(20,004)	(2,668)	—
Comprehensive loss attributable to the Company, net of tax	<u>\$ (748,480)</u>	<u>\$ (463,948)</u>	<u>\$ (594,992)</u>
Preferred stock dividends declared	—	—	(26)
Comprehensive loss attributable to common stockholders	<u>\$ (748,480)</u>	<u>\$ (463,948)</u>	<u>\$ (595,018)</u>

See notes to consolidated financial statements.

PLUG POWER INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
For the years ended December 31, 2022, 2021 and 2020
(In thousands, except share amounts)

	Common Stock		Additional	Accumulated	Treasury Stock		Accumulated	Total
	Shares	Amount	Paid-in Capital	Other Comprehensive Income (Loss)	Shares	Amount	Deficit	Stockholders' Equity
December 31, 2019	318,637,560	\$ 3,186	\$ 1,506,953	\$ 1,288	15,259,045	\$ (31,216)	\$ (1,350,307)	\$ 129,904
Net loss attributable to the Company	—	—	—	—	—	—	(596,155)	(596,155)
Other comprehensive gain	—	—	—	1,163	—	—	—	1,163
Stock-based compensation	439,649	4	17,131	—	—	—	—	17,135
Stock dividend	5,156	—	26	—	—	—	(26)	—
Public offerings, common stock, net	78,976,250	790	1,270,872	—	—	—	—	1,271,662
Stock option exercises	18,056,200	181	41,060	—	667,023	(9,218)	—	32,023
Equity component of 3.75% Convertible Senior Notes issued, net of issuance costs and income tax expense	—	—	100,761	—	—	—	—	100,761
Purchase of capped calls	—	—	(16,253)	—	—	—	—	(16,253)
Termination of capped calls	—	—	24,158	—	—	—	—	24,158
Exercise of warrants	5,180,457	52	(52)	—	—	—	—	—
Provision for common stock warrants	—	—	439,915	—	—	—	—	439,915
Accretion of discount, preferred stock	—	—	(29)	—	—	—	—	(29)
Conversion of preferred stock	2,998,526	30	1,149	—	—	—	—	1,179
Conversion of 5.5% and 7.5% Convertible Senior Notes	30,615,615	306	62,247	—	—	—	—	62,553
Repurchase of 5.5% Convertible Senior Notes, net of income tax benefit	9,409,591	94	(50,864)	—	—	—	—	(50,770)
Common stock issued for acquisitions	9,658,465	97	49,576	—	—	—	—	49,673
December 31, 2020	473,977,469	\$ 4,740	\$ 3,446,650	\$ 2,451	15,926,068	\$ (40,434)	\$ (1,946,488)	\$ 1,466,919
Net loss attributable to the Company	—	—	—	—	—	—	(459,965)	(459,965)
Cumulative impact of Accounting Standards Update 2020-06 adoption	—	—	(130,185)	—	—	—	9,550	(120,635)
Other comprehensive loss	—	—	—	(3,983)	—	—	—	(3,983)
Stock-based compensation	100,662	1	76,469	—	—	—	—	76,470
Public offerings, common stock, net	32,200,000	322	2,022,897	—	—	—	—	2,023,219
Private offerings, common stock, net	54,966,188	549	1,564,065	—	—	—	—	1,564,614
Stock option exercises	5,097,667	51	7,469	—	—	—	—	7,520
Stock exchanged for tax withholding	—	—	—	—	1,148,642	(32,092)	—	(32,092)
Exercise of warrants	24,210,984	242	15,203	—	—	—	—	15,445
Provision for common stock warrants	—	—	6,142	—	—	—	—	6,142
Conversion of 5.5% Convertible Senior Notes	69,808	1	159	—	—	—	—	160
Conversion of 3.75% Convertible Senior Notes	3,016,036	30	15,155	—	—	—	—	15,185
Common stock issued for acquisitions	1,090,796	11	46,686	—	—	—	—	46,697
December 31, 2021	594,729,610	\$ 5,947	\$ 7,070,710	\$ (1,532)	17,074,710	\$ (72,526)	\$ (2,396,903)	\$ 4,605,696
Net loss attributable to the Company	—	—	—	—	—	—	(724,008)	(724,008)
Other comprehensive loss	—	—	—	(24,472)	—	—	—	(24,472)
Stock exchanged for tax withholding	—	—	—	—	1,001,417	(23,735)	—	(23,735)
Stock-based compensation	584,545	6	179,621	—	—	—	—	179,627
Issuance of common stock under restricted stock award	5,148,459	51	(51)	—	—	—	—	—
Stock option exercises	757,424	8	2,293	—	—	—	—	2,301
Exercise of warrants	6,793,479	68	(68)	—	—	—	—	—
Common stock issued for acquisitions	408,268	4	6,103	—	—	—	—	6,107
Provision for common stock warrants	—	—	38,698	—	—	—	—	38,698
December 31, 2022	608,421,785	\$ 6,084	\$ 7,297,306	\$ (26,004)	18,076,127	\$ (96,261)	\$ (3,120,911)	\$ 4,060,214

See notes to consolidated financial statements.

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PLUG POWER INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS
For the years ended December 31, 2022, 2021 and 2020
(In thousands)

	2022	2021	2020
Operating activities			
Net loss	\$ (724,008)	\$ (459,965)	\$ (596,155)
Adjustments to reconcile net loss to net cash used in operating activities:			
Depreciation of long-lived assets	30,402	20,900	14,434
Amortization of intangible assets	21,195	2,469	1,135
Stock-based compensation	179,627	76,470	17,135
(Gain)/loss on extinguishment of debt	986	—	(17,686)
Amortization of debt issuance costs and discount on convertible senior notes	2,710	3,018	17,061
Provision for common stock warrants recorded as a reduction to revenue	12,683	6,566	425,047
Deferred income tax expense (benefit)	170	(16,197)	(30,845)
Impairment of long-lived assets	5,218	10,224	6,430
(Benefit)/loss on service contracts	(8,645)	63,124	33,125
Fair value adjustment to contingent consideration	16,468	11,176	(1,160)
Net realized loss on investments	1,395	81	—
Amortization of premium on available-for-sale securities	990	9,232	—
Lease origination costs	(8,815)	(10,410)	—
Provision for bad debts and other assets	—	—	700
Loss on disposal of assets	268	—	—
Change in fair value for equity securities	18,159	(6,738)	—
Loss on equity method investments	20,166	5,704	—
Changes in operating assets and liabilities that provide (use) cash:			
Accounts receivable	(30,920)	(27,601)	(15,701)
Inventory	(363,709)	(98,791)	(63,389)
Contract assets	(39,515)	(10,608)	—
Prepaid expenses and other assets	(92,521)	(32,392)	(18,401)
Accounts payable, accrued expenses, and other liabilities	88,458	24,908	51,880
Deferred revenue and other contract liabilities	40,615	70,654	20,914
Net cash used in operating activities	(828,623)	(358,176)	(155,476)
Investing activities			
Purchases of property, plant and equipment	(436,610)	(172,166)	(22,526)
Purchase of intangible assets	—	(928)	(1,957)
Purchases of equipment related to power purchase agreements and equipment related to fuel delivered to customers	(27,263)	(20,172)	(25,738)
Purchase of available-for-sale securities	(838,622)	(3,159,372)	—
Proceeds from sales of available-for-sale securities	475,676	778,038	—
Proceeds from maturities of available-for-sale securities	247,879	1,129,088	—
Purchase of equity securities	(5,000)	(169,793)	—
Proceeds from sales of equity securities	—	28,536	—
Net cash paid for acquisitions	(56,906)	(136,526)	(45,113)
Cash paid for non-consolidated entities and non-marketable equity securities	(38,524)	(17,596)	—
Net cash used in investing activities	(679,370)	(1,740,891)	(95,334)
Financing activities			
Proceeds from exercise of warrants, net of transaction costs	—	15,445	—
Payments of contingent consideration	(2,667)	(1,541)	—
Proceeds from public and private offerings, net of transaction costs	—	3,587,833	1,271,714
Payments of tax withholding on behalf of employees for net stock settlement of stock-based compensation	(23,735)	(32,092)	—
Proceeds from exercise of stock options	2,301	7,520	32,023
Proceeds from issuance of convertible senior notes, net	—	—	205,098
Repurchase of convertible senior notes	—	—	(90,238)
Purchase of capped calls and common stock forward	—	—	(16,253)
Proceeds from long-term debt, net	—	—	99,000
Proceeds from the termination of capped calls	—	—	24,158
Principal payments on long-term debt	(121,389)	(48,681)	(48,020)
Proceeds from finance obligations	122,886	108,925	65,259
Principal repayments of finance obligations and finance leases	(54,853)	(39,630)	(27,212)
Net cash (used in) provided by financing activities	(77,457)	3,597,779	1,515,529
Effect of exchange rate changes on cash	2,600	(802)	65
(Decrease)/increase in cash and cash equivalents	(1,790,639)	1,168,865	1,172,908
Increase in restricted cash	207,789	329,045	91,876
Cash, cash equivalents, and restricted cash beginning of period	3,132,194	1,634,284	369,500
Cash, cash equivalents, and restricted cash end of period	\$ 1,549,344	\$ 3,132,194	\$ 1,634,284
Supplemental disclosure of cash flow information			
Cash paid for interest, net of capitalized interest of \$13.1 million, \$4.8 million and \$0	\$ 35,520	\$ 19,327	\$ 28,942
Summary of non-cash activity			
Recognition of right of use asset - finance leases	\$ 25,650	\$ 28,180	\$ —
Recognition of right of use asset - operating leases	178,222	110,337	55,651
Net tangible assets (liabilities) acquired (assumed) in a business combination	5,342	(26,066)	8,751
Common stock issued for acquisitions	6,107	46,697	—
Intangible assets acquired in a business combination	73,952	120,962	32,268
Conversion of convertible senior notes to common stock	—	15,345	62,553
Net transfers between inventory and long-lived assets	1,619	6,297	—
Accrued purchase of fixed assets, cash to be paid in subsequent period	62,320	14,006	—
Settlement of liability from acquisitions	—	7,100	—
Conversion of preferred stock to common stock	—	—	1,179

See notes to consolidated financial statements

Notes to Consolidated Financial Statements

1. Nature of Operations

Description of Business

Plug is facilitating the paradigm shift to an increasingly electrified world by innovating cutting-edge hydrogen and fuel cell solutions.

While we continue to develop commercially viable hydrogen and fuel cell product solutions, we have expanded our offerings to support a variety of commercial operations that can be powered with green hydrogen. We provide electrolyzers that allow customers — such as refineries, producers of chemicals, steel, fertilizer and commercial refueling stations — to generate hydrogen on-site. We are focusing our efforts on (a) industrial mobility applications, including electric forklifts and electric industrial vehicles, at multi-shift high volume manufacturing and high throughput distribution sites where we believe our products and services provide a unique combination of productivity, flexibility, and environmental benefits; (b) stationary power systems that will support critical operations, such as data centers, microgrids, and generation facilities, in either a backup power or continuous power role and replace batteries, diesel generators or the grid for telecommunication logistics, transportation, and utility customers; and (c) production of hydrogen. Plug expects to support these products and customers with an ecosystem of vertically integrated products that produce, transport, store and handle, dispense, and use hydrogen for mobility and power applications.

Our current products and services include:

GenDrive: GenDrive is our hydrogen fueled Proton Exchange Membrane (“PEM”) fuel cell system, providing power to material handling electric vehicles, including Class 1, 2, 3 and 6 electric forklifts, Automated Guided Vehicles (“AGVs”), and ground support equipment.

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

GenCare: GenCare is our ongoing “Internet of Things”-based maintenance and on-site service program for GenDrive fuel cell systems, GenSure fuel cell systems, GenFuel hydrogen storage and dispensing products and ProGen fuel cell engines.

GenSure: GenSure is our stationary fuel cell solution providing scalable, modular PEM fuel cell power to support the backup and grid-support power requirements of the telecommunications, transportation, and utility sectors; GenSure High Power Fuel Cell Platform will support large scale stationary power and data center markets.

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

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. This includes Plug’s membrane electrode assembly (“MEA”), a critical component of the fuel cell stack used in zero-emission fuel cell electric vehicle engines.

Electrolyzers: The design and implementation of 5 and 10MW electrolyzer systems that are modular, scalable hydrogen generators optimized for clean hydrogen production. Electrolyzers generate hydrogen from water using electricity and a special membrane and “green” hydrogen is generated by using renewable energy inputs, such as solar or wind power.

Liquefaction Systems: Plug’s 15 ton-per-day and 30 ton-per-day liquefiers are engineered for high efficiency, reliability, and operational flexibility — providing consistent liquid hydrogen to customers. This design increases plant reliability and availability while minimizing parasitic losses like heat leak and seal gas losses.

Cryogenic Equipment: Engineered equipment including trailers and mobile storage equipment for the distribution of liquified hydrogen, oxygen, argon, nitrogen and other cryogenic gases.

Notes to Consolidated Financial Statements (Continued)

We provide our products and solutions worldwide through our direct sales force, and by leveraging relationships with original equipment manufacturers (“OEMs”) and their dealer networks. Plug is currently targeting Asia, Australia, Europe, Middle East and North America for expansion in adoption. The European Union (the “EU”) has rolled out ambitious targets for the hydrogen economy as part of the EU strategy for energy integration and Plug is seeking to execute on our strategy to become a leader in the European hydrogen economy. Plug intends to implement a targeted account strategy for material handling, securing strategic partnerships with European OEMs, energy companies, utility leaders and accelerating our electrolyzer business. Our global strategy includes leveraging a network of integrators or contract manufacturers. We manufacture our commercially viable products in Latham, New York, Rochester, New York, Slingerlands, New York, Houston, Texas., Lafayette, Indiana, and Spokane, Washington, and support liquid hydrogen production and logistics in Charleston, Tennessee and Kingsland, Georgia.

In addition, our wholly-owned subsidiary, Plug Power LA JV, LLC, created a joint venture with Niloco Hydrogen Holdings LLC, a wholly-owned subsidiary of Olin Corporation (“Olin”), named “Hidrogenii” in the third quarter of 2022. We believe Hidrogenii will support reliability of supply and speed to market for hydrogen throughout North America, and set the foundation for broader collaboration between Plug and Olin. Hidrogenii plans to begin with the construction of a 15-ton-per-day hydrogen plant in St. Gabriel, Louisiana. Hidrogenii is owned 50% by Plug Power LA JV, LLC and 50% by Niloco Hydrogen Holdings LLC. As of December 31, 2022, there has been no activity related to this joint venture.

Our wholly-owned subsidiary, Plug Power France, entered into a joint venture with Renault named HyVia, a French société par actions simplifiée (“HyVia”) in the second quarter 2021. HyVia plans to manufacture and sell fuel cell powered electric light commercial vehicles (“FCELCVs”) and to supply hydrogen fuel and fueling stations to support the FCE-LCV market, in each case primarily in Europe. HyVia is owned 50% by Plug Power France and 50% by Renault.

Our wholly-owned subsidiary, Plug Power Espana S.L. (“Plug Power Spain”), entered into a joint venture with Acciona Generación Renovable, S.A. (“Acciona”), named AccionaPlug S.L., in the fourth quarter 2021. AccionaPlug S.L. plans to develop, operate, and maintain green hydrogen projects throughout Spain and Portugal. AccionaPlug S.L. is owned 50% by Plug Power Spain and 50% by Acciona. This joint venture was funded equally by Acciona and the Company, but has not yet commenced any related activities.

Plug Power Inc. entered into a joint venture with SK E&S named SK Plug Hyverse Co. Ltd. (“SK Plug Hyverse”), which was funded in the first quarter of 2022. The joint venture with SK E&S seeks to accelerate the use of hydrogen as an alternative energy source in Asian markets. Through this initiative, the two companies will collaborate to provide hydrogen fuel cell systems, hydrogen fueling stations, electrolyzers and green hydrogen to the Korean and other Asian markets. This joint venture is owned 49% by Plug Power Inc. and 51% by SK E&S.

Liquidity

As of December 31, 2022, the Company had \$690.6 million of cash and cash equivalents, \$858.7 million of restricted cash, \$1.3 billion of available-for-sale securities and \$134.8 million of equity securities. In January and February 2021, the Company issued and sold in a registered equity offering an aggregate of 32.2 million shares of its common stock at a purchase price of \$65.00 per share for net proceeds of approximately \$2.0 billion. Furthermore, in February 2021, the Company completed a sale of its common stock in connection with a strategic partnership with SK Holdings Co., Ltd. (“SK Holdings”) to accelerate the use of hydrogen as an alternative energy source in Asian markets. The Company sold 54,996,188 shares of its common stock to a subsidiary of SK Holdings at a purchase price of \$29.29 per share, or an aggregate purchase price of approximately \$1.6 billion.

The Company has continued to experience negative cash flows from operations and net losses. The Company incurred net losses attributable to common stockholders of \$724.0 million, \$460.0 million and \$596.2 million for the years ended December 31, 2022, 2021, and 2020, respectively.

The net cash used in operating activities for the year ended December 31, 2022, 2021, and 2020 was \$828.6 million, \$358.2 million, and \$155.5 million, respectively. The Company’s working capital was \$2.7 billion at December 31, 2022, which included cash and cash equivalents of \$690.6 million and restricted cash of \$159.0 million. The Company plans to invest a portion of its available cash to expand its current production and manufacturing capacity, construction of hydrogen plants and to fund strategic acquisitions and partnerships, and capital projects. Future use of the Company’s

Notes to Consolidated Financial Statements (Continued)

funds is discretionary and the Company believes that its working capital and cash position will be sufficient to fund its operations for at least one year after the date the financial statements are issued.

The net cash used in investing activities for the year ended December 31, 2022, 2021, and 2020 was \$679.4 million, \$1.7 billion, and \$95.3 million, respectively. This included purchases of property, plant and equipment and outflows associated with materials, labor, and overhead necessary to construct new leased property. Cash outflows related to equipment that we lease directly to customers are included in net cash used in investing activities.

The net cash (used in) provided by financing activities for the year ended December 31, 2022, 2021, and 2020 was (\$77.5) million, \$3.6 billion, and \$1.5 billion, respectively. The change was primarily driven by proceeds from public and private offerings, net of transaction costs that occurred in 2021.

The Company's significant obligations consisted of the following as of December 31, 2022:

- Operating and finance leases totaling \$320.4 million and \$46.1 million, respectively, of which \$48.9 million and \$8.1 million, respectively, are due within the next 12 months. These leases are primarily related to sale/leaseback agreements entered into with various financial institutions to facilitate the Company's commercial transactions with key customers.
- Finance obligations totaling \$329.2 million of which approximately \$58.9 million is due within the next 12 months. Finance obligations consist primarily of debt associated with the sale of future revenues and failed sale/leaseback transactions.
- Convertible senior notes totaling \$193.9 million at December 31, 2022, none of which are due within the next twelve months. See Note 15, "Convertible Senior Notes," for more details.

The Company believes that its current working capital of \$2.7 billion at December 31, 2022, which includes cash and cash equivalents of \$690.6 million and available-for-sale securities of \$1.3 billion, will provide sufficient liquidity to fund operations for a least one year after the date the financial statements are issued.

2. Summary of Significant Accounting Policies

Principles of Consolidation

The consolidated financial statements include the financial statements of the Company and its wholly-owned subsidiaries. Intercompany balances and transactions have been eliminated in consolidation. In addition, we include our share of the results of our joint ventures HyVia, AccionaPlug S.L. and SK Plug Hyverse, using the equity method based on our economic ownership interest and our ability to exercise significant influence over the operating and financial decisions of HyVia, AccionaPlug S.L., SK Plug Hyverse.

Use of Estimates

The consolidated financial statements of the Company have been prepared in conformity with U.S. generally accepted accounting principles, which require management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenues and expenses during the reporting period. On an on-going basis, we evaluate our estimates and judgments, including those related to revenue recognition, valuation of inventories, goodwill and intangible assets, valuation of long-lived assets, accrual for service loss contracts, operating and finance leases, product warranty accruals, unbilled revenue, common stock warrants, income taxes, and contingencies. We base our estimates and judgments on historical experience and on various other factors and assumptions that are believed to be reasonable under the circumstances, the results of which form the basis for making judgments about (1) the carrying values of assets and liabilities and (2) the amount of revenue and expenses realized that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions.

Notes to Consolidated Financial Statements (Continued)

Leases

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

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

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

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

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

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

Right of use assets for operating and finance leases are periodically reviewed for impairment losses. The Company uses the long-lived assets impairment guidance in ASC Subtopic 360-10, *Property, Plant and Equipment — Overall*, to determine whether a right of use asset is impaired, and if so, the amount of the impairment loss to recognize.

Notes to Consolidated Financial Statements (Continued)

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

Operating and finance lease right of use assets are presented separately on the Company's consolidated balance sheets. The current portions of operating and finance lease liabilities are also presented separately within current liabilities and the long-term portions are presented separately within noncurrent liabilities on the consolidated balance sheets.

The Company has elected not to recognize right of use assets and lease liabilities for short-term leases that have a lease term of 12 months or less. The Company recognizes the lease payments associated with its short-term leases as an expense on a straight-line basis over the lease term.

Revenue Recognition

The Company enters into contracts that may contain one or a combination of fuel cell systems and infrastructure, installation, maintenance, spare parts, fuel delivery and other support services. Contracts containing fuel cell systems and related infrastructure may be sold directly to customers or provided to customers under a PPA. The Company also enters into contracts that contain electrolyzer stacks, systems, maintenance, and other support services.

The Company does not include a right of return on its products other than rights related to standard warranty provisions that permit repair or replacement of defective goods. The Company accrues for anticipated standard warranty costs at the same time that revenue is recognized for the related product, or when circumstances indicate that warranty costs will be incurred, as applicable. Any prepaid amounts would only be refunded to the extent services have not been provided or the fuel cell systems or infrastructure have not been delivered.

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

Promises to the customer are separated into performance obligations, and are accounted for separately if they are (1) capable of being distinct and (2) distinct in the context of the contract. The Company considers a performance obligation to be distinct if the customer can benefit from the good or service either on its own or together with other resources readily available to the customer and the Company's promise to transfer the goods or service to the customer is separately identifiable from other promises in the contract. The Company allocates revenue to each distinct performance obligation based on relative standalone selling prices.

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

The Company has issued to each of Amazon.com NV Investment Holdings LLC and Walmart warrants to purchase shares of the Company's common stock. The Company presents the provision for common stock warrants within each revenue-related line item on the consolidated statements of operations. This presentation reflects a discount that those common stock warrants represent, and therefore revenue is net of these non-cash charges. The provision of common stock warrants is allocated to the relevant revenue-related line items based upon the expected mix of the revenue for each respective contract. See Note 17, "Warrant Transaction Agreements," for more details.

Notes to Consolidated Financial Statements (Continued)

Nature of goods and services

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

(i) Sales of Fuel Cell Systems, Related Infrastructure and Equipment

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

The Company uses a variety of information sources in determining standalone selling prices for fuel cells systems and the related infrastructure. For GenDrive fuel cells, given the nascent nature of the Company's market, the Company considers several inputs, including prices from a limited number of standalone sales as well as the Company's negotiations with customers. The Company also considers its costs to produce fuel cells as well as comparable list prices in estimating standalone selling prices. The Company uses applicable observable evidence from similar products in the market to determine standalone selling prices for GenSure stationary backup power units and hydrogen fueling infrastructure. The determination of standalone selling prices of the Company's performance obligations requires significant judgment, including periodic assessment of pricing approaches and available observable evidence in the market. Once relative standalone selling prices are determined, the Company proportionately allocates the transaction price to each performance obligation within the customer arrangement based upon standalone selling price. The allocated transaction price related to fuel cell systems and spare parts is recognized as revenue at a point in time which usually occurs upon delivery (and occasionally at time of shipment). Revenue on hydrogen infrastructure installations is generally recognized at the point at which transfer of control passes to the customer, which usually occurs upon customer acceptance of the hydrogen infrastructure. The Company uses an input method to determine the amount of revenue to recognize during each reporting period when such revenue is recognized over time, based on the costs incurred to satisfy the performance obligation.

(ii) Sales of Electrolyzer Systems and Solutions

Revenue from sales of electrolyzer systems and solutions represents sales of electrolyzer stacks and systems used to generate hydrogen for various applications including mobility, ammonia production, methanol production, power to gas, and other uses.

The Company uses a variety of information sources in determining standalone selling prices for electrolyzer systems solutions. Electrolyzer stacks are typically sold on a standalone basis and the standalone selling price is the contractual price with the customer. Electrolyzer systems are sold either on a standalone basis or with an extended service agreement and other equipment. The Company uses an adjusted market assessment approach to determine the standalone selling price of electrolyzer systems when sold with extended service or other equipment. This includes considering both standalone selling prices of the systems by the Company and available information on competitor pricing on similar products. The determination of standalone selling prices of the Company's performance obligations requires judgment, including periodic assessment of pricing approaches and available observable evidence in the market. Once relative standalone selling prices are determined, the Company proportionately allocates the transaction price to each performance obligation within the customer arrangement based upon standalone selling price. Revenue on electrolyzer systems and stacks is generally recognized at the point at which transfer of control passes to the customer, which usually occurs upon title transfer at shipment or delivery to the customer location. In certain instances, control of electrolyzer systems transfers to the customer over time, and the related revenue is recognized over time as the performance obligation is satisfied. We recognize revenue over time when contract performance results in the creation of a product for which we do not have an alternative use and the contract includes an enforceable right to payment in an amount that corresponds directly with the value of the performance completed. In these instances, we use an input measure (cost-to-total cost or percentage-of-completion method) of progress to determine the amount of revenue to recognize during each reporting period based on the costs incurred to satisfy the performance obligation.

Payments received from customers are recorded within deferred revenue and customer deposits in the consolidated balance sheets until control is transferred. The related cost of such product and installation is also deferred as a component of deferred cost of revenue in the consolidated balance sheets until control is transferred.

Notes to Consolidated Financial Statements (Continued)

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

Revenue from services performed on fuel cell systems and related infrastructure represents revenue earned on our service and maintenance contracts and sales of spare parts. The Company uses an adjusted market assessment approach to determine standalone selling prices for services. This approach considers market conditions and constraints, as well as objectives while maximizing the use of available observable inputs obtained from a limited number of historical standalone service renewal prices and negotiations with customers. The transaction price allocated to services as discussed above is generally recognized as revenue over time on a straight-line basis over the expected service period, as customers simultaneously receive and consume the benefits of routine, recurring maintenance performed throughout the contract period.

In substantially all of its transactions, the Company sells extended maintenance contracts that generally provide for a five-to-ten-year service period from the date of product installation in exchange for an up-front payment. Services include monitoring, technical support, maintenance and related services. These services are accounted for as a separate performance obligation, and accordingly, revenue generated from these transactions, subject to the proportional allocation of transaction price, is deferred and recognized as revenue over the term of the contract, generally on a straight-line basis. Additionally, the Company may enter into annual service and extended maintenance contracts that are billed monthly. Revenue generated from these transactions is recognized as revenue on a straight-line basis over the term of the contract. Costs are recognized as incurred over the term of the contract. When costs are projected to exceed revenues over the life of the extended maintenance contract, an accrual for loss contracts is recorded. As of December 31, 2022 and 2021, the Company recorded a loss accrual of \$81.1 million and \$89.8 million, respectively. Costs are estimated based upon historical experience and consider the estimated impact of the Company's cost reduction initiatives, if any. The actual results may differ from these estimates. See "Extended Maintenance Contracts" below.

Extended maintenance contracts generally do not contain customer renewal options. Upon expiration, customers may either negotiate a contract extension or switch to purchasing spare parts and maintaining the fuel cell systems on their own.

(iv) Power Purchase Agreements ("PPAs")

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

Revenue associated with these agreements is recognized on a straight-line basis over the life of the agreements as the customers receive the benefits from the Company's performance of the services. The customers receive services ratably over the contract term.

In conjunction with entering into a PPA with a customer, the Company may enter into a separate transaction with third-party financial institutions in which the Company receives proceeds from the sale/leaseback transactions of the equipment and the sale of future service revenue. The proceeds from the financial institution are allocated between the sale of equipment and the sale of future service revenue based on the relative standalone selling prices of equipment and service. The proceeds allocated to the sale of future services are recognized as finance obligations. The proceeds allocated to the sale of the equipment are evaluated to determine if the transaction meets the criteria for sale/leaseback accounting. To meet the sale/leaseback criteria, control of the equipment must transfer to the financial institution, which requires among other criteria the leaseback to meet the criteria for an operating lease and the Company must not have a right to repurchase the equipment (unless specific criteria are met). These transactions typically meet the criteria for sale/leaseback accounting and accordingly, the Company recognizes revenue on the sale of the equipment, and separately recognizes the leaseback obligations.

The Company recognizes an operating lease liability for the equipment leaseback obligation based on the present value of the future payments to the financial institutions that are attributed to the equipment leaseback. The discount rate used to determine the lease liability is the Company's incremental borrowing rate. The Company also records a right of use asset which is amortized over the term of the leaseback. Rental expense is recognized on a straight-line basis over the life of the leaseback and is included as a cost of PPA revenue on the consolidated statements of operations.

Notes to Consolidated Financial Statements (Continued)

Certain of the Company's transactions with financial institutions do not meet the criteria for sale/leaseback accounting and accordingly, no equipment sale is recognized. All proceeds from these transactions are accounted for as finance obligations. The right of use assets related to these transactions are classified as equipment related to the PPAs and fuel delivered to the customers, net in the consolidated balance sheets. The Company uses its transaction-date incremental borrowing rate as the interest rate for its finance obligations that arise from these transactions. No additional adjustments to the incremental borrowing rate have been deemed necessary for the finance obligations that have resulted from the failed sale/leaseback transactions.

In determining whether the sales of fuel cells and other equipment to financial institutions meet the requirements for revenue recognition under sale/leaseback accounting, the Company, as lessee, determines the classification of the lease. The Company estimates certain key inputs to the associated calculations such as: 1) discount rate used to determine the present value of future lease payments, 2) fair value of the fuel cells and equipment, and 3) useful life of the underlying asset(s):

- ASC Topic 842 requires a lessee to discount its future lease payments using the interest rate implicit in the lease or, if that rate cannot be readily determined, its incremental borrowing rate. Generally, the Company cannot determine the interest rate implicit in its leases because it does not have access to the lessor's estimated residual value or the amount of the lessor's deferred initial direct costs. Therefore, the Company generally uses its incremental borrowing rate to estimate the discount rate for each lease. Adjustments that considered the Company's actual borrowing rate, inclusive of securitization, as well as borrowing rates for companies of similar credit quality were applied in the determination of the incremental borrowing rate.
- In order for the lease to be classified as an operating lease, the present value of the future lease payments cannot exceed 90% of the fair value of the leased assets. The Company estimates the fair value of the lease assets using the sales prices.
- In order for a lease to be classified as an operating lease, the lease term cannot exceed 75% (major part) of the estimated useful life of the leased asset. The average estimated useful life of the fuel cells is 10 years, and the average estimated useful life of the hydrogen infrastructure is 20 years. These estimated useful lives are compared to the term of each lease to determine the appropriate lease classification.

(v) Fuel Delivered to Customers

Revenue associated with fuel delivered to customers represents the sale of hydrogen to customers that has been purchased by the Company from a third party or generated on site. The stand-alone selling price is not estimated because it is sold separately and therefore directly observable.

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

Contract costs

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

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

The Company recognizes the incremental costs of obtaining contracts as an expense when incurred if the amortization period of the assets that the Company otherwise would have recognized is one year or less. These costs are included in selling, general and administrative expenses. Capitalized contract costs at December 31, 2022 and 2021 were \$0.6 million and \$0.4 million, respectively.

Notes to Consolidated Financial Statements (Continued)

Cash and Cash Equivalents

For purposes of the consolidated statements of cash flows, the Company considers all highly-liquid debt instruments with original maturities of three months or less to be cash equivalents. At December 31, 2022, cash equivalents consisted of U.S. Treasury securities with original maturities of three months or less, and money market funds. Due to their short-term nature, the carrying amounts reported in the consolidated balance sheets approximate the fair value of cash and cash equivalents. The Company's cash and cash equivalents are deposited with financial institutions located in the U.S. and may at times exceed insured limits.

Restricted Cash

Restricted cash consists primarily of cash that serves as support for leasing arrangements. Any cash that is legally restricted from use is classified as restricted cash. If the purpose of restricted cash relates to acquiring a long-term asset, liquidating a long-term liability, or is otherwise unavailable for a period longer than one year from the balance sheet date, the restricted cash is included in other long-term assets. Otherwise, restricted cash is included in other current assets in the Consolidated Balance Sheets.

Available-for-sale securities

Available-for-sale securities is comprised of U.S. Treasury securities, certificates of deposit and corporate bonds, with original maturities greater than three months. We consider these securities to be available for use in our current operations, and therefore classify them as current even if we do not dispose of the securities in the following year.

Available-for-sale securities are recorded at fair value as of each balance sheet date. As of each balance sheet date, unrealized gains and losses, with the exception of credit related losses, are recorded to accumulated other comprehensive loss. Any credit related losses are recognized as a credit loss allowance on the balance sheet with a corresponding adjustment to the statement of operations. Realized gains and losses are due to the sale and maturity of securities classified as available-for-sale and includes the loss from accumulated other comprehensive loss reclassifications for previously unrealized losses on available-for-sale debt securities.

Equity securities

Equity securities are comprised of fixed income and equity market index mutual funds. Equity securities are valued at fair value with changes in the fair value recognized in our consolidated statements of operations. We consider these securities to be available for use in our current year operations, and therefore classify them as current even if we do not dispose of the securities in the following year.

Investments in non-consolidated entities and non-marketable equity securities

The Company accounts for its investments in non-consolidated entities, such as HyVia, AccionaPlug S.L., and SK Plug Hyverse, as equity method investments.

Included in "Investments in non-consolidated entities and non-marketable equity securities" on the consolidated balance sheet are equity investments without readily determinable fair values ("non-marketable equity securities"). Non-marketable equity securities that do not qualify for equity method accounting are measured at cost, less any impairment and adjusted for changes resulting from observable price changes in orderly transactions for the identical or similar investments of the same issuer. Our investment in non-marketable equity securities was \$8.8 million and \$5.0 million as of December 31, 2022 and 2021, respectively.

Common Stock Warrant Accounting

The Company accounts for common stock warrants as either derivative liabilities or as equity instruments depending on the specific terms of the respective warrant agreements. Common stock warrants that meet certain applicable requirements of ASC Subtopic 815-40, *Derivatives and Hedging – Contracts in Entity's Own Equity*, and other related guidance, including the ability of the Company to settle the warrants without the issuance of registered shares or the

Notes to Consolidated Financial Statements (Continued)

absence of rights of the grantee to require cash settlement, are accounted for as equity instruments. The Company classifies these equity instruments within additional paid-in capital on the consolidated balance sheets.

Common stock warrants accounted for as equity instruments represent the warrants issued to Amazon and Walmart as discussed in Note 17, “Warrant Transaction Agreements.” The Company adopted FASB ASU 2019-08, *Compensation – Stock Compensation* (Topic 718) and *Revenue from Contracts with Customers* (Topic 606), which requires entities to measure and classify share-based payment awards granted to a customer by applying the guidance under Topic 718, as of January 1, 2019.

In order to calculate warrant charges, the Company used the Black-Scholes pricing model, which required key inputs including volatility and risk-free interest rate and certain unobservable inputs for which there is little or no market data, requiring the Company to develop its own assumptions. The Company estimated the fair value of unvested warrants, considered to be probable of vesting, at the time. Based on that estimated fair value, the Company determined warrant charges, which are recorded as a reduction of revenue in the consolidated statement of operations.

Accounts Receivable

Accounts receivable are stated at the amount billed or billable to customers and are ordinarily due between 30 and 90 days after the issuance of the invoice. Receivables are reserved or written off based on individual credit evaluation and specific circumstances of the customer. The allowance for expected credit losses for current accounts receivable is based primarily on past collections experience relative to the length of time receivables are past due; however, when available evidence reasonably supports an assumption that counterparty credit risk over the expected payment period will differ from current and historical payment collections, a forecasting adjustment will be reflected in the allowance for expected credit losses. The allowance for doubtful accounts and related receivable are reduced when the amount is deemed uncollectible. As of December 31, 2022, and 2021, the allowance for doubtful accounts was \$43 thousand and \$39 thousand, respectively.

Inventory

Inventories are valued at the lower of cost, determined on a first-in, first-out basis, and net realizable value. All inventory, including spare parts inventory held at service locations, is not relieved until the customer has received the product, at which time the customer obtains control of the goods. We maintain inventory levels adequate for our short-term needs within the next twelve months based upon present levels of production. An allowance for potential non-saleable inventory due to excess stock or obsolescence is based upon a detailed review of inventory, past history, and expected usage.

Property, Plant and Equipment

Property, plant and equipment are originally recorded at cost or, if acquired as part of a business combination, at fair value. Maintenance and repairs are expensed as costs are incurred. Depreciation on plant and equipment, which includes depreciation on one of the Company’s manufacturing facilities, which is accounted for as a financing obligation, is calculated on the straight-line method over the estimated useful lives of the assets. Gains and losses resulting from the sale of property and equipment are recorded in current operations. Included within machinery and equipment is certain equipment related to our hydrogen plants. The Company records depreciation and amortization over the following estimated useful lives:

Leasehold improvements	10 – 30 years
Machinery and equipment	2 – 30 years
Software	1 – 5 years

Equipment related to PPAs and Fuel Delivered to Customers

Equipment related to PPAs and fuel delivered to customers primarily consists of the assets deployed related to PPAs and sites where we deliver fuel to customers as well as equipment related to failed sale/leaseback transactions.

Notes to Consolidated Financial Statements (Continued)

Equipment is depreciated over its useful life. Depreciation expense is recorded on a straight-line basis and is included in cost of revenue for PPAs or cost of fuel delivered to customers, respectively, in the consolidated statements of operations.

Impairment of Long-Lived Assets

Property, equipment, leasehold improvements, and finite-lived intangible assets

Long-lived assets, such as property, equipment, leasehold improvements, and finite-lived intangible assets are reviewed for impairment whenever events and circumstances indicate that the carrying amount of an asset may not be recoverable. If circumstances require a long-lived asset or asset group to be tested for impairment, the Company first compares undiscounted cash flows expected to be generated by that asset or asset group to its carrying amount. If the carrying amount of the long-lived asset or asset group is not recoverable on an undiscounted cash flow basis, an impairment is recognized to the extent that the carrying amount exceeds its fair value. In making these determinations, the Company uses certain assumptions, including, but not limited to: (i) estimated fair value of the assets; and (ii) estimated, undiscounted future cash flows expected to be generated by these assets, which are based on additional assumptions such as asset utilization, length of service, the asset will be used in the Company's operations, and (iii) estimated residual values. Fair value is determined using various valuation techniques including discounted cash flow models, quoted market values and third-party independent appraisals, as considered necessary.

There was impairment of \$0.8 million and \$0 of property, equipment, leasehold improvements, or finite-lived intangible assets during the years ended December 31, 2022 and 2021, respectively.

PPA Executory Contract Considerations

We evaluate PPA assets on a quarterly basis to identify events or changes in circumstances ("triggering events") that indicate the carrying value of certain assets may not be recoverable. PPA assets that we evaluate include right of use lease assets, equipment deployed to our PPAs, and assets related primarily to our fuel delivery business.

Upon the occurrence of a triggering event, PPA assets are evaluated to determine if the carrying amounts are recoverable. The determination of recoverability is made based upon the estimated undiscounted future net cash flows of assets grouped at the lowest level for which there are identifiable cash flows independent of the cash flows of other groups. For operating assets, the Company has generally determined that the lowest level of identifiable cash flows is based on the customer sites. The assets related primarily to our fuel delivery business are considered to be their own asset group. The cash flows are estimated based on the remaining useful life of the primary asset within the asset group.

For assets related to our PPA agreements, we consider all underlying cash inflows related to our contract revenues and cash outflows relating to the costs incurred to service the PPAs. Our cash flow estimates used in the recoverability test, are based upon, among other things, historical results adjusted to reflect our best estimate of future cash flows and operating performance. Development of future cash flows also requires us to make assumptions and to apply judgment, including timing of future expected cash flows, future cost savings initiatives, and determining recovery values. Changes to our key assumptions related to future performance and other economic and market factors could adversely affect the outcome of our recoverability tests and cause more asset groups to be tested for impairment.

If the estimated undiscounted future net cash flows for a given asset group are less than the carrying amount of the related asset group, an impairment loss is determined by comparing the estimated fair value with the carrying amount of the asset group. The impairment loss is then allocated to the assets in the asset group based on the asset's relative carrying amounts. However, assets are not impaired below their then estimated fair values. Fair value is generally determined through various valuation techniques, including discounted cash flow models, quoted market values and third-party independent appraisals, as well as year-over-year trends in pricing of our new equipment and overall evaluation of our industry and market, as considered necessary. The Company considers these indicators with certain of its own internal indices and metrics in determining fair value in light of the nascent state of the Company's market and industry. The estimate of fair value represents our best estimates of these factors and is subject to variability. Changes to our key assumptions related to future performance and other economic and market factors could adversely affect our impairment evaluation.

Notes to Consolidated Financial Statements (Continued)

The Company has determined that the assets deployed for certain PPA arrangements, as well as certain assets related to the delivery of fuel to customers, are not recoverable based on the undiscounted estimated future cash flows of the asset group, and an expense \$4.4 million was recorded to the impairment of long-lived assets on the income statement. However, the estimated fair value of the assets in these asset groups equal or exceed the carrying amount of the assets or otherwise limit the amount of impairment that would have been recognized. The Company has identified the primary source of the losses for certain PPA arrangements to be the maintenance components of the PPA arrangements and the impact of customer warrant non-cash provisions. As the PPA arrangements are considered to be executory contracts and there is no specific accounting guidance that permits loss recognition for these revenue contracts, the Company has not recognized a provision for the expected future losses under these revenue arrangements. The Company expects that it will recognize future losses for these arrangements as it continues its efforts to reduce costs of delivering the maintenance component of these arrangements. The Company has estimated total future revenues and costs for these types of arrangements based on existing contracts and leverage of the related assets. For the future estimates, the Company used service cost estimates for extended maintenance contracts and customer warrant provisions at rates consistent with experience to date. The terms for the underlying estimates vary but the average residual term on the existing contracts is 5 years.

Intangible Assets

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

Extended Maintenance Contracts

On a quarterly basis, we evaluate any potential losses related to our extended maintenance contracts for fuel cell systems and related infrastructure that has been sold. We measure loss accruals at the customer contract level. The expected revenues and expenses for these contracts include all applicable expected costs of providing services over the remaining term of the contracts and the related unearned net revenue. A loss is recognized if the sum of expected costs of providing services under the contract exceeds related unearned net revenue and is recorded as a provision for loss contracts related to service in the consolidated statements of operations. A key component of these estimates is the expected future service costs. In estimating the expected future service costs, the Company considers its current service cost level and applies judgement related to certain cost saving estimates that have been implemented in the field. The expected future cost savings will be primarily dependent upon the success of the Company's initiatives related to increasing stack life and achieving better economies of scale on service labor. If the expected cost saving initiatives are not realized, this will increase the costs of providing services and could adversely affect our estimated contract loss accrual. Further, as we continue to work to improve quality and reliability; however, unanticipated additional quality issues or warranty claims may arise and additional material charges may be incurred in the future. These quality issues could also adversely affect our contract loss accrual. The Company has undertaken and will soon undertake several other initiatives to extend the life and improve the reliability of its equipment. As a result of these initiatives and our additional expectation that the increase in certain costs will abate, the Company believes that its contract loss accrual is sufficient. However, if elevated service costs persist, the Company will adjust its estimated future service costs and increase its contract loss accrual estimate.

Notes to Consolidated Financial Statements (Continued)

The following table shows the roll forward of balances in the accrual for loss contracts, including changes due to the provision for loss accrual, loss accrual acquired from acquisition, releases to service cost of sales, releases due to the provision for warrants and foreign currency translation adjustment (in thousands):

	December 31, 2022	December 31, 2021	December 31, 2020
Beginning balance	\$ 89,773	\$ 24,013	\$ 3,702
Provision for loss accrual	23,295	71,988	35,473
Loss accrual acquired from acquisition	—	2,636	—
Releases to service cost of sales	(35,446)	(8,864)	(2,348)
Increase/(decrease) to loss accrual related to customer warrants	3,506	—	(12,814)
Foreign currency translation adjustment	(62)	—	—
Ending balance	<u>\$ 81,066</u>	<u>\$ 89,773</u>	<u>\$ 24,013</u>

Goodwill

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

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

The Company performs an impairment review of goodwill on an annual basis at October 31, and when a triggering event is determined to have occurred between annual impairment tests. Due to the proximity of the fourth quarter 2022 interim goodwill impairment analysis date to the annual assessment date, and to allow for a greater amount of time to analyze the assessment of goodwill in advance of our annual report filing deadline in future years, we updated our accounting policy to shift the annual impairment test from December 1 to October 31 in 2022 and future fiscal years. This change in date of the annual impairment test is not deemed material as the new measurement date October 31 is in relative close proximity to the previous measurement date and the year-end balance sheet date, is not expected to materially impact the goodwill analysis, and allows for more timely financial reporting on these estimates.

For the years ended December 31, 2022, 2021, and 2020, the Company performed a qualitative assessment of goodwill for its single reporting unit based on multiple factors including market capitalization and determined that it is not more likely than not that the fair value of its reporting unit is less than the carrying amount.

Fair Value Measurements

The Company records the fair value of assets and liabilities in accordance with ASC 820, *Fair Value Measurement* (“ASC 820”). ASC 820 defines fair value as the price received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date and in the principal or most advantageous market for that asset or liability. The fair value should be calculated based on assumptions that market participants would use in pricing the asset or liability, not on assumptions specific to the entity.

In addition to defining fair value, ASC 820 expands the disclosure requirements around fair value and establishes a fair value hierarchy for valuation inputs. The hierarchy prioritizes the inputs into three levels based on the extent to which inputs used in measuring fair value are observable in the market. Each fair value measurement is reported in one of the three levels, which is determined by the lowest level input that is significant to the fair value measurement in its entirety.

These levels are:

- Level 1 — quoted prices (unadjusted) in active markets for identical assets or liabilities.
- Level 2 — quoted prices for similar assets and liabilities in active markets or inputs that are observable

Notes to Consolidated Financial Statements (Continued)

for the asset or liability, either directly or indirectly through market corroboration, for substantially the full term of the financial instrument.

- Level 3 — unobservable inputs reflecting management's own assumptions about the inputs used in pricing the asset or liability at fair value.

Income Taxes

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

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

Foreign Currency Translation

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

Research and Development

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

Stock-Based Compensation

The Company maintains employee stock-based compensation plans, which are described more fully in Note 19, "Employee Benefit Plans." Stock-based compensation represents the cost related to stock-based awards granted to employees and directors. The Company measures stock-based compensation cost at grant-date, based on the fair value of the award, and recognizes the cost as expense on a straight-line basis over the option's requisite service period. Forfeitures are recognized as they occur.

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

Beginning in September 2021, the Company also issued performance stock option awards that include a market condition. The grant date fair value of performance stock options is estimated using a Monte Carlo simulation model and the cost is recognized using the accelerated attribution method.

The Company records deferred tax assets for awards that result in deductions on the Company's income tax returns, based upon the amount of compensation cost recognized and the Company's statutory tax rate. Differences between the deferred tax assets recognized for financial reporting purposes and the actual tax deduction reported on the Company's

Notes to Consolidated Financial Statements (Continued)

income tax return are recorded in the income statement. Tax expense (benefit) for the year ended December 31, 2022 was \$0.8 million.

Convertible Senior Notes

The Company accounts for its convertible senior notes as a single liability measured at amortized cost. The Company uses the effective interest rate method to amortize the debt issuance costs to interest expense over the respective term of the convertible senior notes.

Subsequent Events

The Company evaluates subsequent events at the date of the balance sheet as well as conditions that arise after the balance sheet date but before the consolidated financial statements are issued. The effects of conditions that existed at the balance sheet date are recognized in the consolidated financial statements. Events and conditions arising after the balance sheet date but before the consolidated financial statements are issued are evaluated to determine if disclosure is required to keep the consolidated financial statements from being misleading. To the extent such events and conditions exist, if any, disclosures are made regarding the nature of events and the estimated financial effects for those events and conditions. See Note 23, "Subsequent Events."

Recent Accounting Pronouncements

Recently Adopted Accounting Pronouncements

In March 2020, ASU 2020-04, *Reference Rate Reform* (Topic 848): *Facilitation of the Effects of Reference Rate Reform on Financial Reporting*, was issued to provide temporary optional expedients and exceptions to the GAAP guidance on contract modifications and hedge accounting to ease the financial reporting burdens related to the expected market transition from the London Interbank Offered Rate (LIBOR) and other interbank offered rates to alternative reference rates. This update was effective starting March 12, 2020 and the Company may elect to apply the amendments prospectively through December 31, 2022. The adoption of this standard is not expected to have a material impact on the Company's consolidated financial statements. During the fourth quarter of fiscal year 2022, the Company adopted the optional relief guidance provided under this ASU after modifying certain debt to update the reference rate from LIBOR to SOFR. This caused a temporary mismatch in our interest rate swap and debt for a period of time. The application of this expedient preserves the presentation of the derivatives consistent with past presentation.

In October of 2021, ASU No. 2021-08- *Business Combinations* (Topic 805): *Accounting for Contract Assets and Contract Liabilities from Contracts with Customers* was issued. The standard update provides an exception to the fair value measurement for revenue contracts acquired in a business combination. The Company has elected to early adopt the standards update as of the fourth quarter of 2021.

On January 1, 2021, we early adopted ASU No. 2020-06, *Debt — Debt with Conversion and Other Options* (Subtopic 470-20) and *Derivatives and Hedging — Contracts in Entity's Own Equity* (Subtopic 815-40) using the modified retrospective approach. Consequently, the Company's 3.75% Convertible Senior Notes due 2025 (the "3.75% Convertible Senior Notes") is now accounted for as a single liability measured at its amortized cost. This accounting change removed the impact of recognizing the equity component of the Company's convertible notes at issuance and the subsequent accounting impact of additional interest expense from debt discount amortization. Future interest expense of the convertible notes will be lower as a result of adoption of this guidance and net loss per share will be computed using the if-converted method for convertible instruments. The cumulative effect of the accounting change upon adoption on January 1, 2021 increased the carrying amount of the 3.75% Convertible Senior Notes by \$120.6 million, reduced accumulated deficit by \$9.6 million and reduced additional paid-in capital by \$130.2 million.

Recently Issued and Not Yet Adopted Accounting Pronouncements

In March 2020, ASU 2020-03, *Codification Improvements to Financial Instruments*, was issued to make various codification improvements to financial instruments to make the standards easier to understand and apply by eliminating inconsistencies and providing clarifications. This update will be effective at various dates beginning with date of issuance

Notes to Consolidated Financial Statements (Continued)

of this ASU. The adoption of this standard will not have a material impact on the Company's consolidated financial statements.

3. Acquisitions*Alloy Custom Products, LLC and WesMor Cryogenics, LLC*

On December 5, 2022, the Company acquired two subsidiaries of Cryogenic Industrial Solutions, LLC, Alloy Custom Products, LLC, and WesMor Cryogenics, LLC (collectively, "CIS"). The CIS acquisition will allow the Company to increase its production capabilities for stainless steel and aluminum cryogenic transport truck-mounted cryogenic pressure vessels, cryogenic transport trailers, and other mobile storage containers.

The fair value of consideration paid by the Company in connection with the CIS acquisition was as follows (in thousands):

Cash	\$	30,700
Due to Cryogenic Industrial Solutions, LLC		500
Plug Power Inc. Common Stock		6,107
Total consideration	\$	<u>37,307</u>

The following table summarizes the preliminary allocation of the purchase price to the estimated fair value of the net assets acquired, excluding goodwill (in thousands):

Cash	\$	267
Accounts receivable		5,038
Inventory		11,120
Prepaid expenses and other assets		464
Property, plant and equipment		3,887
Right of use asset		1,538
Identifiable intangible assets		13,430
Lease liability		(1,562)
Accounts payable, accrued expenses and other liabilities		(3,826)
Deferred revenue		(6,193)
Total net assets acquired, excluding goodwill	\$	<u>24,163</u>

The preliminary allocation of the purchase price is still considered provisional due to the finalization of the valuation for the assets acquired and liabilities assumed and related tax liabilities, if any, in relation to the CIS acquisition. Therefore, the fair values of the assets acquired and liabilities assumed are subject to change as we obtain additional information for valuation assumptions such as market demand for CIS product lines to support forecasted financial data, which will not exceed 12 months from the date of acquisition.

The fair value of the tradename totaling \$6.2 million was calculated using the relief from royalty approach which is a variant of the income approach, and was assigned a useful life of fifteen years. The fair value of the customer relationships totaling \$7.1 million was calculated using the multi-period excess earnings method ("MPEEM") approach which is a variant of the income approach, and was assigned a useful life of fifteen years. The basic principle of the MPEEM approach is that a single asset, in isolation, is not capable of generating cash flow for an enterprise. Several assets are brought together and exploited to generate cash flow. The fair value of the non-compete agreements was \$0.2 million with a useful life of five years.

Notes to Consolidated Financial Statements (Continued)

The goodwill was primarily attributed to the value of synergies created with the Company's current and future offerings and the value of the assembled workforce. Goodwill and intangible assets are not deductible for income tax purposes. Goodwill associated with the CIS acquisition was calculated as follows (in thousands):

Consideration paid	\$ 37,307
Less: net assets acquired	(24,163)
Total goodwill recognized	<u>\$ 13,144</u>

The acquisition of CIS contributed \$3.7 million to total consolidated revenue for the year ended December 31, 2022.

Joule Processing LLC

On January 14, 2022, the Company acquired Joule Processing LLC ("Joule"), an engineered modular equipment, process design and procurement company founded in 2009.

The fair value of consideration paid by the Company in connection with the Joule acquisition was as follows (in thousands):

Cash	28,140
Contingent consideration	41,732
Total consideration	<u>\$ 69,872</u>

The contingent consideration represents the estimated fair value associated with earn-out payments of up to \$130.0 million that the sellers are eligible to receive in cash or shares of the Company's common stock (at the Company's election). Of the total earnout consideration, \$90.0 million is related to the achievement of certain financial performance and \$40 million is related to the achievement of certain operational milestones.

The following table summarizes the final allocation of the purchase price to the estimated fair value of the net assets acquired, excluding goodwill (in thousands):

Current assets	\$ 2,672
Property, plant and equipment	493
Right of use asset	182
Identifiable intangible assets	60,522
Lease liability	(374)
Current liabilities	(2,612)
Contract liability	(3,818)
Total net assets acquired, excluding goodwill	<u>\$ 57,065</u>

The fair value of the developed technology totaling \$59.2 million included in the identifiable intangible assets was calculated using the MPEEM approach. Therefore, to determine cash flow from the developed technology over its useful life of 15 years, one must deduct the related expenses incurred for the exploitation of other assets used for the generation of overall cash flow. The fair value of the tradename totaling \$0.8 million was calculated using the relief from royalty approach which is a variant of the income approach, and was assigned a useful life of four years. The fair value of the non-compete agreements was \$0.5 million with a useful life of six years.

In addition to identifiable intangible assets, the fair value of acquired work in process and finished goods inventory, included in inventory, was estimated based on the estimated selling price less costs to be incurred and a market participant profit rate.

In connection with the acquisition, the Company recorded on its consolidated balance sheet a liability of \$41.7 million representing the fair value of contingent consideration payable, and is recorded in the consolidated balance sheet

Notes to Consolidated Financial Statements (Continued)

in the loss accrual for service contracts and other liabilities. The fair value of this contingent consideration was \$53.2 million as of December 31, 2022, and as a result a \$11.5 million increase was recorded in the consolidated statement of operations for the year ended December 31, 2022.

Included in the purchase price consideration are contingent earn-out payments as described above. Due to the nature of the earn-outs, a scenario based analysis using the probability of achieving the milestone expectations was used to determine the fair value of the contingent consideration. These fair value measurements were based on unobservable inputs and are considered to be Level 3 financial instruments.

The goodwill was primarily attributed to the value of synergies created with the Company's current and future offerings and the value of the assembled workforce. Goodwill and intangible assets are not deductible for income tax purposes. Goodwill associated with the Joule acquisition was calculated as follows (in thousands):

Consideration paid	\$ 28,140
Contingent consideration	41,732
Less: net assets acquired	(57,065)
Total goodwill recognized	<u>\$ 12,807</u>

During the year ended December 31, 2022, the Company recorded a measurement period adjustment to decrease goodwill by \$0.1 million due to the payment of a hold back liability, which was recorded in accrued expenses in the condensed consolidated balance. The acquisition of Joule contributed \$36.5 million to total consolidated revenue for the year ended December 31, 2022, respectively.

Applied Cryo Technologies Acquisition

On November 22, 2021, the Company acquired 100% of the outstanding shares of Applied Cryo Technologies, Inc. ("Applied Cryo"). Applied Cryo is a manufacturer of engineered equipment servicing multiple applications, including cryogenic trailers and mobile storage equipment for the oil and gas markets and equipment for the distribution of liquified hydrogen, oxygen, argon, nitrogen and other cryogenic gases.

The fair value of consideration paid by the Company in connection with the Applied Cryo acquisition was as follows (in thousands):

Cash	\$ 98,559
Plug Power Inc. Common Stock	46,697
Contingent consideration	14,000
Settlement of preexisting relationship	2,837
Total consideration	<u>\$ 162,093</u>

Included in the \$98.6 million of cash consideration above, \$5.0 million is consideration held by our paying agent in connection with this acquisition reported as restricted cash, with a corresponding accrued liability as of December 31, 2022 on the Company's consolidated balance sheet. We expect that this will be settled in the first half of 2023.

The contingent consideration represents the estimated fair value associated with earn-out payments of up to \$30.0 million that the sellers are eligible to receive in the form of cash or shares of the Company's Common Stock (at the Company's election). Of the total earnout consideration, \$15.0 million is related to the achievement of certain production targets during the period of January 1, 2022 through July 1, 2024, and \$15.0 million is associated with the achievement of certain cost targets during the same period.

Notes to Consolidated Financial Statements (Continued)

The following table summarizes the final allocation of the purchase price to the estimated fair value of the net assets acquired, excluding goodwill (in thousands):

Cash	\$	1,180
Accounts receivable		4,123
Inventory		24,655
Prepaid expenses and other assets		1,506
Property, plant and equipment		4,515
Right of use asset		2,788
Identifiable intangible assets		70,484
Lease liability		(2,672)
Accounts payable, accrued expenses and other liabilities		(7,683)
Deferred tax liability		(16,541)
Deferred revenue		(12,990)
Total net assets acquired, excluding goodwill	\$	<u>69,365</u>

During the year ended December 31, 2022, the Company recorded a measurement period adjustment to decrease goodwill by \$0.5 million due to a release of escrow, which was recorded to accrued expenses in the condensed consolidated balance sheet.

Identifiable intangible assets consisted of developed technology, non-compete agreements, backlog, tradename, and customer relationships. The fair value of the developed technology totaling \$26.3 million was calculated using the relief from royalty approach which is a variant of the income approach. The application of the relief from royalty approach involves estimating the value of an intangible asset by quantifying the present value of the stream of market derived royalty payments that the owner of the intangible asset is exempted or 'relieved' from paying. The fair value of the tradename totaling \$13.7 million was calculated using the relief from royalty approach. The fair value of the acquired customer relationships totaling \$26.6 million was calculated using the multi-period excess earnings method ("MPEEM") approach which is a variant of the income approach. The basic principle of the MPEEM approach is that a single asset, in isolation, is not capable of generating cash flow for an enterprise. Several assets are brought together and exploited to generate cash flow. Therefore, to determine cash flow from the exploitation of customer relationships, one must deduct the related expenses incurred for the exploitation of other assets used for the generation of overall cash flow. The fair value of the customer relationships was estimated by discounting the net cash flow derived from the expected revenues attributable to the acquired customer relationships. The fair value of the non-compete agreements and backlog was \$3.9 million.

In addition to identifiable intangible assets, the fair value of acquired work in process and finished goods inventory was estimated based on the estimated selling price less costs to be incurred and a market participant profit rate.

Included in the purchase consideration are four contingent earn-out payments (as described above): the first production earn-out, second production earn-out, the first cost earn-out, and the second cost earn-out. Due to the nature of the earn-outs, as outlined in the purchase agreement, a scenario based method ("SBM") was used to value these contingent payments as the payments are milestone based in nature. These fair value measurements were based on unobservable inputs and are considered to be level 3 financial instruments.

In connection with the acquisition, the Company recorded on its consolidated balance sheet an initial liability of \$14.0 million representing the fair value of contingent consideration payable, and is recorded in the consolidated balance sheet in the loss accrual for service contracts and other liabilities. The fair value of this contingent consideration was \$15.9 million as of December 31, 2022, and as a result a \$1.9 million increase was recorded in the consolidated statement of operations for the year ended December 31, 2022.

In connection with the acquisition of these net deferred tax liabilities, the Company reduced its valuation allowance by \$16.5 million and recognized a tax benefit \$16.5 million during the year ended December 31, 2021.

Notes to Consolidated Financial Statements (Continued)

The goodwill was primarily attributed to the value of synergies created with the Company's current and future offerings and the value of the assembled workforce. Goodwill and intangible assets are not deductible for income tax purposes. Goodwill associated with the Applied Cryo acquisition was calculated as follows (in thousands):

Consideration paid	\$ 162,093
Less: net assets acquired	(69,365)
Total goodwill recognized	<u>\$ 92,728</u>

Frames Holding B.V. Acquisition

On December 9, 2021, the Company acquired 100% of the outstanding shares of Frames Holding B.V. ("Frames"). Frames, a leader in turnkey systems integration for the energy section, designs, builds, and delivers processing equipment, separation technologies, flow control and safeguarding systems, renewable energy and water solutions.

The fair value of consideration paid by the Company in connection with the Frames acquisition was as follows (in thousands):

Cash	\$ 94,541
Contingent consideration	29,057
Settlement of preexisting relationship	4,263
Total consideration	<u>\$ 127,861</u>

The contingent consideration represents the estimated fair value associated with earn-out payments of up to €30.0 million that the sellers are eligible to receive in the form of cash. The contingent consideration is related to the achievement of certain production targets during the four years following the closing date and is payable in two equal installments. The first target is achieved when the Company has shipped or has made ready for shipment 100MW of containerized electrolyzer systems, or non-containerized electrolyzer systems or arrays. The remaining targets are achieved when the Company has shipped or has made ready for shipment an additional 50MW of containerized electrolyzer systems, or non-containerized electrolyzer systems or arrays, with a maximum of additional 150MW.

The following table summarizes the final allocation of the purchase price to the estimated fair value of the net assets acquired, excluding goodwill (in thousands):

Cash	\$ 45,394
Accounts receivable	17,910
Inventory	34
Prepaid expenses and other assets	3,652
Property, plant and equipment	709
Right of use asset	1,937
Contract asset	9,960
Identifiable intangible assets	50,478
Lease liability	(1,937)
Contract liability	(22,737)
Accounts payable, accrued expenses and other liabilities	(18,465)
Deferred tax liability	(10,644)
Provision for loss contracts	(2,636)
Warranty provisions	(7,566)
Total net assets acquired, excluding goodwill	<u>\$ 66,089</u>

During the year ended December 31, 2022, the Company recorded a measurement period adjustment of an increase to goodwill by \$6.6 million due to the recording of the deferred tax liabilities surrounding the tangible and intangible assets acquired.

Notes to Consolidated Financial Statements (Continued)

Identifiable intangible assets consisted of developed technology, non-compete agreements, backlog, tradename, and customer relationships.

The fair value of the developed technology totaling \$5.3 million was calculated using the relief from royalty approach which is a variant of the income approach. The fair value of the tradename totaling \$11.6 million was calculated using the relief from royalty approach. The fair value of the acquired customer relationships totaling \$27.2 million was calculated using the MPEEM approach which is a variant of the income approach. The fair value of the customer relationships was estimated by discounting the net cash flow derived from the expected revenues attributable to the acquired customer relationships. The fair value of the non-compete agreements totaling \$4.9 million was calculated using the with and without income approach. The fair value of the backlog was \$1.4 million.

Included in the purchase consideration are four contingent earn-out payments (as described above). Due to the nature of the earn-outs, as outlined in the purchase agreement, a scenario based analysis using the probability of achieving the milestone expectations was used to determine the fair value of the contingent consideration. These fair value measurements were based on unobservable inputs and are considered to be level 3 financial instruments.

In connection with the acquisition, the Company recorded on its consolidated balance sheet a liability of \$29.1 million representing the fair value of contingent consideration payable, and is recorded in the consolidated balance sheet in the loss accrual for service contracts and other liabilities. The fair value of this contingent consideration was \$31.0 million as of December 31, 2022, of which \$3.4 million was due to an increase in the fair value of the liability and was recorded in the consolidated statement of operations, offset by \$1.7 million due to the foreign currency translation.

Included in Frames' net assets acquired are net deferred tax liabilities of \$10.6 million.

The goodwill was primarily attributed to the value of synergies created with the Company's current and future offerings and the value of the assembled workforce. Goodwill and intangible assets are not deductible for income tax purposes. Goodwill associated with the Frames acquisition was calculated as follows (in thousands):

Consideration paid	\$ 127,861
Less: net assets acquired	(66,089)
Total goodwill recognized	<u>\$ 61,772</u>

Purchased goodwill is not expected to be deductible for tax purposes.

The acquisition of Frames would have contributed \$75.7 million and \$3.8 million to total consolidated revenue and net income for the year ended December 31, 2021, respectively, had the acquisition occurred on January 1, 2021. The following table reflects the unaudited pro forma results of operations for the year ended December 31, 2021 assuming that the Frames acquisition had occurred on January 1, 2021 (in thousands):

	For the year ended December 31, 2021
Revenue	\$ 570,502
Net loss	\$ (456,510)

None of the CIS, Joule or Applied Cryo acquisitions were material to our consolidated results of operations or financial position and, therefore, pro forma financial information is not presented.

Notes to Consolidated Financial Statements (Continued)

4. Investments

The fair values of the Company's investments are based upon prices provided by an independent pricing service. Management has assessed and concluded that these prices are reasonable and has not adjusted any prices received from the independent provider.

The amortized cost, gross unrealized gains and losses, fair value of those investments classified as available-for-sale, and allowance for credit losses at December 31, 2022 are summarized as follows (in thousands):

	December 31, 2022				
	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value	Allowance for Credit Losses
Corporate bonds	\$ 200,735	\$ 7	\$ (7,109)	\$ 193,633	—
U.S. Treasuries	1,154,879	111	(15,680)	1,139,310	—
Total	\$ 1,355,614	\$ 118	\$ (22,789)	\$ 1,332,943	\$ —

The amortized cost, gross unrealized gains and losses, fair value of those investments classified as available-for-sale, and allowance for credit losses at December 31, 2021 are summarized as follows (in thousands):

	December 31, 2021				
	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value	Allowance for Credit Losses
Corporate bonds	\$ 228,614	\$ —	\$ (2,232)	\$ 226,382	—
U.S. Treasuries	1,014,319	20	(456)	1,013,883	—
Total	\$ 1,242,933	\$ 20	\$ (2,688)	\$ 1,240,265	\$ —

The following table summarizes the fair value and gross unrealized losses on securities classified as available-for-sale, and length of time that the individual securities have been in a continuous loss position as of December 31, 2022 (in thousands):

	December 31, 2022					
	Less than 12 months		12 months or greater		Total	
	Fair Value of Investments with Unrealized Losses	Gross Unrealized Losses	Fair Value of Investments with Unrealized Losses	Gross Unrealized Losses	Fair Value of Investments with Unrealized Losses	Gross Unrealized Losses
Corporate bonds	\$ 39,047	\$ (1,186)	\$ 152,837	\$ (5,924)	\$ 191,884	\$ (7,110)
U.S. Treasuries	491,633	(969)	356,610	(14,710)	848,243	(15,679)
Total available-for-sale securities	\$ 530,680	\$ (2,155)	\$ 509,447	\$ (20,634)	\$ 1,040,127	\$ (22,789)

The aggregate fair value of available-for-sale securities in an unrealized loss position at December 31, 2021 was \$969.0 million. No available-for-sale securities had been in a continuous unrealized loss position for greater than 12 months in 2021.

We regularly review available-for-sale securities for declines in fair values that we determine to be credit related. In order to determine whether an allowance for credit losses was required, we considered factors such as whether amounts related to securities have become uncollectible, whether we intend to sell a security, and whether it is more likely than not that we will be required to sell a security prior to recovery. The Company also reviewed the declines in market value related to our available-for-sale securities and determined that these declines were due to fluctuations in interest rates. As of December 31, 2022, the Company did not have an allowance for credit losses related to available-for-sale securities.

Notes to Consolidated Financial Statements (Continued)

The cost, gross unrealized gains and losses, and fair value of those investments classified as equity securities at December 31, 2022 are summarized as follows (in thousands):

	December 31, 2022			
	Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
Fixed income mutual funds	\$ 70,257	\$ —	\$ (2,620)	\$ 67,637
Exchange traded mutual funds	75,999	—	(8,800)	67,199
Total	<u>\$ 146,256</u>	<u>\$ —</u>	<u>\$ (11,420)</u>	<u>\$ 134,836</u>

The cost, gross unrealized gains and losses, and fair value of those investments classified as equity securities at December 31, 2021 are summarized as follows (in thousands):

	December 31, 2021			
	Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
Fixed income mutual funds	\$ 70,247	\$ —	\$ (574)	\$ 69,673
Exchange traded mutual funds	71,010	7,312	—	78,322
Total	<u>\$ 141,257</u>	<u>\$ 7,312</u>	<u>\$ (574)</u>	<u>\$ 147,995</u>

A summary of the amortized cost and fair value of investments classified as available-for-sale, by contractual maturity, as of December 31, is as follows (in thousands):

Maturity:	December 31, 2022		December 31, 2021	
	Amortized	Fair	Amortized	Fair
	Cost	Value	Cost	Value
Less than 12 months	\$ 1,045,120	\$ 1,039,333	\$ 670,584	\$ 670,306
12 months or greater	310,494	293,610	572,349	569,959
Total	<u>\$ 1,355,614</u>	<u>\$ 1,332,943</u>	<u>\$ 1,242,933</u>	<u>\$ 1,240,265</u>

Accrued interest income was \$3.0 million and \$3.7 at December 31, 2022 and 2021, respectively, and is included within the balance for prepaid expenses and other current assets in the consolidated balance sheets.

Equity Method Investments

As of December 31, 2022 and December 31, 2021, the Company accounted for the following investments in the investee's common stock under the equity method, which are included in the investments in non-consolidated entities and non-marketable equity securities on the consolidated balance sheets (amounts in thousands):

Investee	Formation Date	As of December 31, 2022		As of December 31, 2021	
		Common Stock Ownership %	Carrying Value	Common Stock Ownership %	Carrying Value
HyVia	Q2 2021	50%	\$ 11,281	50%	\$ 6,545
AccionaPlug S.L.	Q4 2021	50%	2,225	50%	526
SK Plug Hyverse	Q1 2022	49%	8,937	N/A	—
			<u>\$ 22,443</u>		<u>\$ 7,071</u>

Notes to Consolidated Financial Statements (Continued)

5. Fair value measurements

Securities reported at fair value utilizing Level 1 inputs represent assets whose fair value is determined based upon observable unadjusted quoted market prices for identical assets in active markets. Level 2 securities represent assets whose fair value is determined using observable market information such as previous day trade prices, quotes from less active markets or quoted prices of securities with similar characteristics. Available-for-sale securities are characterized as Level 1 assets, such as U.S. Treasuries, and Level 2 assets, as value of the corporate bonds are determined using observable market inputs. Equity securities are characterized as Level 1 assets, as their fair values are determined using active markets for identical assets. There were no transfers between Level 1, Level 2, or Level 3 for the year ended December 31, 2022.

Financial instruments not recorded at fair value on a recurring basis include equity method investments that have not been remeasured or impaired in the current period, such as our investments in HyVia, AccionaPlug S.L., and SK Plug Hyverse. During the year ended December 31, 2022, the Company contributed approximately \$25.0 million, \$0.8 million and \$8.3 million, respectively, to HyVia, AccionaPlug S.L. and SK Plug Hyverse.

The following table summarizes the carrying amount and estimated fair value of the Company's financial instruments at December 31, 2022 and 2021 (in thousands):

		As of December 31, 2022						
		Carrying Amount	Fair Value	Fair Value Measurements				
				Level 1	Level 2	Level 3		
Assets								
Cash equivalents	\$	212,577	\$	212,577	\$	212,577	\$	—
Corporate bonds		193,633		193,633		—		193,633
U.S. Treasuries		1,139,310		1,139,310		1,139,310		—
Equity securities		134,836		134,836		134,836		—
Liabilities								
Contingent consideration		116,165		116,165		—		—
								116,165
		As of December 31, 2021						
		Carrying Amount	Fair Value	Fair Value Measurements				
				Level 1	Level 2	Level 3		
Assets								
Cash equivalents	\$	115,241	\$	115,241	\$	115,241	\$	—
Corporate bonds		226,382		226,382		—		226,382
U.S. Treasuries		1,013,883		1,013,883		1,013,883		—
Equity securities		147,995		147,995		147,995		—
Swaps and forward contracts		70		70		70		—
Liabilities								
Contingent consideration		62,297		62,297		—		—
Swaps and forward contracts		981		981		981		—

The liabilities measured at fair value on a recurring basis that have unobservable inputs and are therefore categorized as Level 3 are related to contingent consideration. The fair value as of December 31, 2022 is comprised of \$100.1 million related to the acquisitions of Frames, Applied Cryo, and Joule, as well as \$16.1 million from two acquisitions in 2020. Giner ELX, Inc. was acquired in June 2020, the remaining contingent consideration of \$14.5 million as of December 31, 2022 is related to the achievement of the dry build electrolyzer stack earnout and the achievement of certain revenue targets for years 2022 through 2023. United Hydrogen Group Inc. was acquired in June 2020, and included in the purchase price was contingent consideration based on the future performance related to the expansion of the liquefaction capacity of the Charleston, Tennessee liquid hydrogen plant. The Company's liability for this contingent consideration was measured at fair value based on the Company's expectations of achieving the expansion milestone. In the audited consolidated balance sheets, contingent consideration is recorded in the contingent consideration, loss accrual

Notes to Consolidated Financial Statements (Continued)

for service contracts, and other liabilities financial statement line item, and is comprised of the following unobservable inputs for the year ending December 31, 2022:

Financial Instrument	Fair Value	Valuation Technique	Unobservable Input	Range (weighted average)
Contingent Consideration	\$ 85,269	Scenario based method	Credit spread	15.73% - 15.74%
			Discount rate	19.85% - 20.68%
	11,310	Monte carlo simulation	Credit spread	15.74%
			Discount rate	20.00%-20.30%
	19,586	Monte carlo simulation	Revenue volatility	45.29%
			Credit spread	15.73%
			Revenue volatility	35.7% - 23.1% (35.0%)
			Gross profit volatility	106.7% - 23.2% (60.0%)
	<u>116,165</u>			

In the audited consolidated balance sheets, contingent consideration is recorded in the contingent consideration, loss accrual for service contracts, and other liabilities financial statement line item, and is comprised of the following unobservable inputs for the year ending December 31, 2021:

Financial Instrument	Fair Value	Valuation Technique	Unobservable Input	Range (weighted average)
Contingent Consideration	\$ 49,927	Scenario based method	Credit spread	12.31% - 12.57%
			Discount rate	12.45% - 13.13%
	12,370	Monte carlo simulation	Credit spread	12.40%
			Discount rate	12.46%-13.18%
			Revenue volatility	48.60%
	<u>62,297</u>			

The change in the carrying amount of Level 3 liabilities for the year ended December 31, 2022 was as follows (in thousands):

	Year ended December 31, 2022
Beginning Balance at December 31, 2021	62,297
Payments	(2,667)
Additions due to acquisitions	41,732
Fair value adjustments	16,468
Foreign currency translation adjustment	(1,665)
Ending balance at December 31, 2022	<u>116,165</u>

6. Earnings Per Share

Basic earnings per common stock are computed by dividing net loss attributable to common stockholders by the weighted average number of common stock outstanding during the reporting period. After January 1, 2021, the date of the adoption of ASU 2020-06, in periods when we have net income, the shares of our common stock subject to the convertible notes outstanding during the period will be included in our diluted earnings per share under the if-converted method. Since the Company is in a net loss position, all common stock equivalents would be considered anti-dilutive and are therefore not included in the determination of diluted earnings per share. Accordingly, basic and diluted loss per share are the same.

Notes to Consolidated Financial Statements (Continued)

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

	Year ended December 31,		
	2022	2021	2020
Numerator:			
Net loss attributable to common stockholders	\$ (724,008)	\$ (459,965)	\$ (596,181)
Denominator:			
Weighted average number of common stock outstanding	579,716,708	558,182,177	354,790,106

The potentially dilutive securities are summarized as follows:

	At December 31,		
	2022	2021	2020
Stock options outstanding (1)	27,598,269	23,806,909	10,284,498
Restricted stock outstanding (2)	6,276,376	4,851,873	5,874,642
Common stock warrants (3)	88,774,725	80,017,181	104,753,740
Convertible Senior Notes (4)	39,170,766	39,170,766	42,256,610
Number of dilutive potential shares of common stock	161,820,136	147,846,729	163,169,490

- (1) During the years ended December 31, 2022, 2021, and 2020, the Company granted 4,761,724, 16,502,335, and 3,509,549, stock options, respectively.
- (2) During the years ended December 31, 2022, 2021, and 2020, the Company granted 4,289,682, 1,894,356, and 3,227,149, shares of restricted stock, respectively.
- (3) In August 2022, the Company issued a warrant to acquire up to 16,000,000 shares of the Company's common stock as part of a transaction agreement with Amazon, subject to certain vesting events, as described in Note 17, "Warrant Transaction Agreements." The warrant had no shares exercised of the Company's common stock as of December 31, 2022.

In April 2017, the Company issued a warrant to acquire up to 55,286,696 of the Company's common stock as part of a transaction agreement with Amazon, subject to certain vesting events, as described in Note 17, "Warrant Transaction Agreements." The warrant was exercised with respect to 24,704,450 shares and 17,461,994 shares of the Company's common stock as of December 31, 2022 and 2021, respectively.

In July 2017, the Company issued a warrant to acquire up to 55,286,696 of the Company's common stock as part of a transaction agreement with Walmart, subject to certain vesting events, as described in Note 17, "Warrant Transaction Agreements." The warrant had been exercised with respect to 13,094,217 shares of the Company's common stock as of December 31, 2022 and 2021.

- (4) In March 2018, the Company issued \$100.0 million in aggregate principal amount of the 5.5% Convertible Senior Notes due 2023 (the "5.5% Convertible Senior Notes"). In May 2020, the Company repurchased \$66.3 million of the 5.5% Convertible Senior Notes due 2023 (the "5.5% Convertible Senior Notes") and in the fourth quarter of 2020, \$33.5 million of the 5.5% Convertible Senior Notes were converted into approximately 14.6 million shares of common stock. The remaining \$160 thousand aggregate principal amount of the 5.5% Convertible Senior Notes were converted into 69,808 shares of common stock in January 2021. In September 2019, the Company issued \$40.0 million in aggregate principal amount of the 7.5% Convertible Senior Note due 2023 (the "7.5% Convertible Senior Note"), which was fully converted into 16.0 million shares of common stock on July 1, 2020. In May 2020, the Company issued \$212.5 million in aggregate principal amount of the 3.75% Convertible Senior Notes. During 2021, \$15.2 million of the 3.75% Convertible Senior Notes were converted into 3,016,036 shares of common stock. There were no other conversions for the year ended December 31, 2022.

Notes to Consolidated Financial Statements (Continued)

7. Inventory

Inventory as of December 31, 2022 and 2021, consists of the following (in thousands):

	December 31, 2022	December 31, 2021
Raw materials and supplies - production locations	\$ 450,432	\$ 187,449
Raw materials and supplies - customer locations	18,860	16,294
Work-in-process	112,231	58,341
Finished goods	64,113	7,079
Inventory	<u>\$ 645,636</u>	<u>\$ 269,163</u>

As of December 31, 2022 and 2021, the reserve for excess and obsolete inventory was \$5.4 million and \$3.5 million, respectively.

Inventory is primarily comprised of raw materials, work-in-process, and finished goods. The increase in inventory is primarily due to a combination of new product offerings, as well as increased revenue and orders.

8. Property, Plant and Equipment

Property, plant and equipment at December 31, 2022 and 2021 consists of the following (in thousands):

	December 31, 2022	December 31, 2021
Land	\$ 1,772	\$ 1,165
Construction in progress	575,141	169,415
Leasehold improvements	21,363	2,099
Software, machinery, and equipment	169,633	112,068
Property, plant and equipment	767,909	284,747
Less: accumulated depreciation	(48,116)	(29,124)
Property, plant and equipment, net	<u>\$ 719,793</u>	<u>\$ 255,623</u>

Construction in progress is primarily comprised of construction of five hydrogen production plants, the Gigafactory in Rochester, NY, and our facility in the Slingerlands, NY. Completed assets are transferred to their respective asset classes, and depreciation begins when an asset is ready for its intended use. Interest on outstanding debt is capitalized during periods of capital asset construction and amortized over the useful lives of the related assets. For the years ended December 31, 2022 and 2021, we capitalized \$13.1 million and \$5.5 million of interest.

Depreciation expense related to property, plant and equipment was \$19.0 million, \$6.9 million, and \$4.8 million for the years ended December 31, 2022, 2021, and 2020, respectively.

9. Equipment Related to Power Purchase Agreements and Fuel Delivered to Customers, net

Equipment related to power purchase agreements and fuel delivered to customers, net, at December 31, 2022 and 2021 consists of the following (in thousands):

	December 31, 2022	December 31, 2021
Equipment related to power purchase agreements and fuel delivered to customers	\$ 109,683	\$ 89,641
Less: accumulated depreciation	(20,390)	(16,739)
Equipment related to power purchase agreements and fuel delivered to customers, net	<u>89,293</u>	<u>72,902</u>

Notes to Consolidated Financial Statements (Continued)

As of December 31, 2022 and 2021, the Company had deployed assets at customer sites that had associated PPAs. These PPAs expire over the next one to ten years. PPAs contain termination clauses with associated penalties, the amount of which cause the likelihood of cancellation to be remote.

Depreciation expense is \$6.9 million, \$7.4 million and \$7.9 million for the years ended December 31, 2022, 2021 and 2020, respectively.

The Company recorded an impairment of \$1.5 million and \$10.2 million for the years ended December 31, 2022 and 2021, respectively.

The Company terminated its contractual relationship with a fuel provider effective March 31, 2021. The Company has historically leased fuel tanks from this provider. As a result of this termination, the Company recognized approximately \$17.0 million of various costs for the year ended December 31, 2021, primarily for removal of tanks, reimbursement of unamortized installation costs, costs to temporarily provide customers with fuel during the transition period, and certain other contract settlement costs, which were recorded in the Company's consolidated statement of operations as cost of revenue — fuel delivered to customers. The Company also purchased certain fuel tanks that were previously under operating leases from the fuel provider during 2021 and included in equipment related to power purchase agreements and fuel delivered to customers. In 2022, there were no such vendor terminations.

10. Intangible Assets and Goodwill

The gross carrying amount and accumulated amortization of the Company's acquired identifiable intangible assets as of December 31, 2022 are as follows (in thousands):

	Weighted Average Amortization Period	Gross Carrying Amount	Accumulated Amortization	Total
Acquired technology	14 years	\$ 104,221	\$ (12,754)	\$ 91,467
Dry stack electrolyzer technology	10 years	29,000	(2,417)	26,583
Customer relationships, Non-compete agreements, Backlog & Trademark	13 years	102,521	(12,846)	89,675
		<u>\$ 235,742</u>	<u>\$ (28,017)</u>	<u>\$ 207,725</u>

The gross carrying amount and accumulated amortization of the Company's acquired identifiable intangible assets as of December 31, 2021 are as follows (in thousands):

	Weighted Average Amortization Period	Gross Carrying Amount	Accumulated Amortization	Total
Acquired technology	13 years	\$ 45,530	\$ (5,392)	\$ 40,138
Customer relationships, Non-compete agreements, Backlog & Trademark	12 years	90,497	(1,427)	89,070
In process research and development	Indefinite	29,000	—	29,000
		<u>\$ 165,027</u>	<u>\$ (6,819)</u>	<u>\$ 158,208</u>

The change in the gross carrying amount of the acquired technology from 2021 to 2022, was primarily due to the acquisition of Joule and CIS, the addition of the dry build electrolyzer stack related to the Giner ELX acquisition, and changes in foreign currency translation.

Amortization expense for acquired identifiable intangible assets for the years ended December 31, 2022, 2021 and 2020 was \$21.2 million, \$2.5 million and \$1.1 million, respectively.

Notes to Consolidated Financial Statements (Continued)

Estimated amortization expense for subsequent years was as follows (in thousands):

2023	\$	19,033
2024		18,973
2025		18,204
2026		16,635
2027		16,628
2028 and thereafter		118,252
Total	\$	<u>207,725</u>

Goodwill was \$248.6 million and \$220.4 million as of December 31, 2022 and 2021 respectively, which primarily increased \$26.1 million as a result of the Joule and CIS acquisitions, and decreased \$3.8 million due to translation adjustments for Plug Power Europe and Frames goodwill. There were no impairments during the years ended December 31, 2022, 2021 and 2020.

The change in the carrying amount of goodwill for the year ended December 31, 2022 was as follows (in thousands):

Beginning balance at December 31, 2021	\$	220,436
Acquisitions		26,087
Measurement period adjustments		5,868
Foreign currency translation adjustment		(3,784)
Ending balance at December 31, 2022	\$	<u>248,607</u>

11. Accrued Expenses

Accrued expenses at December 31, 2022 and 2021 consist of (in thousands):

	2022	2021
Accrued payroll and compensation related costs	\$ 18,231	\$ 22,005
Accrual for capital expenditures	53,089	6,735
Accrued accounts payable	53,899	36,701
Accrued sales and other taxes	15,112	10,632
Accrued interest	421	429
Accrued other	15,678	2,735
Total	<u>\$ 156,430</u>	<u>\$ 79,237</u>

12. Operating and Finance Lease Liabilities

As of December 31, 2022, the Company had operating leases, as lessee, primarily associated with sale/leaseback transactions that are partially secured by restricted cash, security deposits and pledged escrows (see also Note 1, “Nature of Operations”) as summarized below. These leases expire over the next one to nine years. Minimum rent payments under operating leases are recognized on a straight-line basis over the term of the lease.

Leases contain termination clauses with associated penalties, the amount of which cause the likelihood of cancellation to be remote. At the end of the lease term, the leased assets may be returned to the lessor by the Company, the Company may negotiate with the lessor to purchase the assets at fair market value, or the Company may negotiate with the lessor to renew the lease at market rental rates. No residual value guarantees are contained in the leases. No financial covenants are contained within the lease, however there are customary operational covenants such as assurance the Company properly maintains the leased assets and carries appropriate insurance, etc. The leases include credit support in the form of either cash, collateral or letters of credit. See Note 21, “Commitments and contingencies,” for a description of cash held as security associated with the leases.

Notes to Consolidated Financial Statements (Continued)

The Company has finance leases associated with its property and equipment in Latham, New York and at fueling customer locations. The fair value of this finance obligation approximated the carrying value as of December 31, 2022.

Future minimum lease payments under operating and finance leases (with initial or remaining lease terms in excess of one year) as of December 31, 2022 were as follows (in thousands):

	Operating Lease Liability	Finance Lease Liability	Total Lease Liabilities
2023	\$ 82,019	\$ 10,901	\$ 92,920
2024	81,157	10,851	92,008
2025	76,444	13,763	90,207
2026	67,951	10,904	78,855
2027	53,741	6,947	60,688
2028 and thereafter	96,147	—	96,147
Total future minimum payments	457,459	53,366	510,824
Less imputed interest	(137,094)	(7,230)	(144,324)
Total	\$ 320,365	\$ 46,137	\$ 366,500

Rental expense for all operating leases was \$67.6 million, \$38.6 million, and \$22.3 million for the years ended December 31, 2022, 2021, and 2020, respectively.

At December 31, 2022 and 2021, security deposits associated with sale/leaseback transactions were \$5.8 million and \$3.5 million, respectively, and were included in other assets in the consolidated balance sheet.

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

	Year ended December 31, 2022	Year ended December 31, 2021
Cash payments (in thousands)	\$ 63,214	\$ 37,463
Weighted average remaining lease term (years)	6.52	5.60
Weighted average discount rate	11.2%	10.9%

Finance lease costs include amortization of the right of use assets (i.e., depreciation expense) and interest on lease liabilities (i.e., interest expense in the consolidated statement of operations), and were \$6.2 million and \$2.1 million for the year ended December 31, 2022 and 2021.

At December 31, 2022 and 2021, the right of use assets associated with finance leases, net was \$53.7 million and \$32.5 million, respectively. The accumulated depreciation for these right of use assets was \$4.7 million and \$1.5 million at December 31, 2022 and 2021, respectively.

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

	Year ended December 31, 2022	Year ended December 31, 2021
Cash payments (in thousands)	\$ 9,033	\$ 3,648
Weighted average remaining lease term (years)	3.92	4.56
Weighted average discount rate	6.7%	6.7%

Notes to Consolidated Financial Statements (Continued)

13. Finance Obligation

The Company has sold future services to be performed associated with certain sale/leaseback transactions and recorded the balance as a finance obligation. The outstanding balance of this obligation at December 31, 2022 was \$312.1 million, \$55.4 million and \$256.6 million of which was classified as short-term and long-term, respectively, on the accompanying consolidated balance sheet. The outstanding balance of this obligation at December 31, 2021 was \$236.6 million, \$37.5 million and \$199.1 million of which was classified as short-term and long-term, respectively, on the accompanying consolidated balance sheet. The amount is amortized using the effective interest method. Interest expense recorded related to finance obligations for the year ended December 31, 2022 and 2021 was \$29.7 million and \$21.0 million, respectively. The fair value of this finance obligation approximated the carrying value as of both December 31, 2022 and 2021.

In prior periods, the Company entered into sale/leaseback transactions that were accounted for as financing transactions and reported as part of finance obligations. The outstanding balance of this obligation at December 31, 2022 was \$17.2 million, \$3.5 million and \$13.7 million of which was classified as short-term and long-term, respectively on the accompanying consolidated balance sheet. The outstanding balance of finance obligations related to sale/leaseback transactions at December 31, 2021 was \$17.0 million, \$4.5 million and \$12.5 million of which was classified as short-term and long-term, respectively on the accompanying consolidated balance sheet. The fair value of this finance obligation approximated the carrying value as of both December 31, 2022 and December 31, 2021.

Future minimum payments under finance obligations notes above as of December 31, 2022 were as follows (in thousands):

	Sale of future revenue - debt	Sale/leaseback financings	Total Finance Obligations
2023	\$ 88,161	\$ 4,468	\$ 92,629
2024	88,161	10,223	98,384
2025	82,904	1,319	84,223
2026	66,181	1,319	67,500
2027	49,610	1,319	50,929
2028 and thereafter	34,634	1,345	35,979
Total future minimum payments	409,651	19,993	429,644
Less imputed interest	(97,577)	(2,827)	(100,404)
Total	\$ 312,074	\$ 17,166	\$ 329,240

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

	Year ended December 31, 2022	Year ended December 31, 2021
Cash payments (in thousands)	\$ 72,377	\$ 57,016
Weighted average remaining term (years)	4.84	5.03
Weighted average discount rate	11.1%	10.8%

14. Long-Term Debt

In March 2019, the Company entered into a loan and security agreement, as amended, with Generate Lending, LLC, providing for a secured term loan facility in the amount of \$100 million (the "Term Loan Facility"). In December 2022, the Company fully repaid the outstanding balance of the Term Loan Facility, which resulted in a recording of a loss on the extinguishment of debt of \$1.0 million on the consolidated statement of operations.

In June 2020, the Company acquired debt as part of the acquisition of United Hydrogen Group Inc. The outstanding carrying value of the debt is \$9.0 million as of December 31, 2022. The outstanding principal on the debt is

Notes to Consolidated Financial Statements (Continued)

\$11.4 million and the unamortized debt discount is \$2.4 million, bearing varying interest rates ranging from 2.2% to 8.3%, and is scheduled to mature in 2026. As of December 31, 2022, the principal balance is due at each of the following dates is the following (in thousands):

	December 31, 2023	\$	5,960
	December 31, 2024		3,357
	December 31, 2025		1,200
	December 31, 2026		900
		\$	<u>11,417</u>

15. Convertible Senior Notes***3.75% Convertible Senior Notes***

On May 18, 2020, the Company issued \$200.0 million in aggregate principal amount of 3.75% Convertible Senior Notes due June 1, 2025, which is referred to herein as the 3.75% Convertible Senior Notes, in a private placement to qualified institutional buyers pursuant to Rule 144A under the Securities Act of 1933, as amended, or the Securities Act. On May 29, 2020, the Company issued an additional \$12.5 million in aggregate principal amount of 3.75% Convertible Senior Notes.

At issuance in May 2020, the total net proceeds from the 3.75% Convertible Senior Notes were as follows:

	Amount (in thousands)
Principal amount	\$ 212,463
Less initial purchasers' discount	(6,374)
Less cost of related capped calls	(16,253)
Less other issuance costs	(617)
Net proceeds	<u>\$ 189,219</u>

The 3.75% Convertible Senior Notes bear interest at a rate of 3.75% per year, payable semi-annually in arrears on June 1 and December 1 of each year, beginning on December 1, 2020. The notes will mature on June 1, 2025, unless earlier converted, redeemed or repurchased in accordance with their terms.

The 3.75% Convertible Senior Notes are senior, unsecured obligations of the Company and rank senior in right of payment to any of the Company's indebtedness that is expressly subordinated in right of payment to the notes, equal in right of payment to any of the Company's existing and future liabilities that are not so subordinated, effectively junior in right of payment to any of the Company's secured indebtedness to the extent of the value of the collateral securing such indebtedness, and structurally subordinated to all indebtedness and other liabilities, including trade payables, of its current or future subsidiaries.

Holders of the 3.75% Convertible Senior Notes may convert their notes at their option at any time prior to the close of the business day immediately preceding December 1, 2024 in the following circumstances:

- 1) during any calendar quarter commencing after March 31, 2021, if the last reported sale price of the Company's common stock exceeds 130% of the conversion price for each of at least 20 trading days (whether or not consecutive) during a period of 30 consecutive trading days ending on, and including, the last trading day of the immediately preceding calendar quarter;
- 2) during the five business days after any five consecutive trading day period (such five consecutive trading day period, the measurement period) in which the trading price per \$1,000 principal amount of the 3.75% Convertible Senior Notes for each trading day of the measurement period was less than 98% of the product of the last reported sale price of the Company's common stock and the conversion rate on each such trading day;

Notes to Consolidated Financial Statements (Continued)

- 3) if the Company calls any or all of the 3.75% Convertible Senior Notes for redemption, any such notes that have been called for redemption may be converted at any time prior to the close of business on the second scheduled trading day immediately preceding the redemption date; or
- 4) upon the occurrence of specified corporate events, as described in the indenture governing the 3.75% Convertible Senior Notes.

On or after December 1, 2024, the holders of the 3.75% Convertible Senior Notes may convert all or any portion of their notes at any time prior to the close of business on the second scheduled trading day immediately preceding the maturity date regardless of the foregoing conditions.

The initial conversion rate for the 3.75% Convertible Senior Notes is 198.6196 shares of the Company's common stock per \$1,000 principal amount of notes, which is equivalent to an initial conversion price of approximately \$5.03 per share of the Company's common stock, subject to adjustment upon the occurrence of specified events. Upon conversion, the Company will pay or deliver, as applicable, cash, shares of the Company's common stock or a combination of cash and shares of the Company's common stock, at the Company's election. During the year ended December 31, 2022, there were no conversions. During the year ended December 31, 2021, \$15.2 million of the 3.75% Convertible Senior Notes were converted and the Company issued approximately 3.0 million shares of common stock in conjunction with these conversions.

In addition, following certain corporate events or following issuance of a notice of redemption, the Company will increase the conversion rate for a holder who elects to convert its notes in connection with such a corporate event or convert its notes called for redemption during the related redemption period in certain circumstances.

The 3.75% Convertible Senior Notes will be redeemable, in whole or in part, at the Company's option at any time, and from time to time, on or after June 5, 2023 and before the 41st scheduled trading day immediately before the maturity date, at a cash redemption price equal to 100% of the principal amount of the notes to be redeemed, plus accrued and unpaid interest, if any, but only if the last reported sale price per share of the Company's common stock exceeds 130% of the conversion price then in effect for at least 20 trading days (whether or not consecutive), including at least one of the three trading days immediately preceding the date the Company sends the related redemption notice, during any 30 consecutive trading day period ending on, and including, the trading day immediately preceding the date on which the Company sends such redemption notice.

If the Company undergoes a "fundamental change" (as defined in the Indenture), holders may require the Company to repurchase their notes for cash all or any portion of their notes at a fundamental change repurchase price equal to 100% of the principal amount of the notes to be repurchased, plus accrued and unpaid interest, to, but excluding, the fundamental change repurchase date.

The Company accounts for the 3.75% Convertible Senior Notes as a liability. We incurred transaction costs related to the issuance of the 3.75% Convertible Senior Notes of approximately \$7.0 million, consisting of initial purchasers' discount of approximately \$6.4 million and other issuance costs of \$0.6 million which were recorded as debt issuance cost (presented as contra debt in the consolidated balance sheets) and are being amortized to interest expense over the term of the 3.75% Convertible Senior Notes.

The 3.75% Convertible Senior Notes consisted of the following (in thousands):

	December 31, 2022	December 31, 2021
Principal amounts:		
Principal	\$ 197,278	\$ 197,278
Unamortized debt issuance costs (1)	(3,359)	(4,645)
Net carrying amount	<u>\$ 193,919</u>	<u>\$ 192,633</u>

- 1) Included in the consolidated balance sheets within the 3.75% Convertible Senior Notes, net and amortized over the remaining life of the notes using the effective interest rate method.

Notes to Consolidated Financial Statements (Continued)

The following table summarizes the total interest expense and effective interest rate related to the 3.75% Convertible Senior Notes (in thousands, except for effective interest rate):

	December 31, 2022	December 31, 2021
Interest expense	\$ 7,398	\$ 7,446
Amortization of debt issuance costs	1,286	1,670
Total	8,684	9,116
Effective interest rate	4.5%	4.5%

Based on the closing price of the Company's common stock of \$12.37 on December 30, 2022, the if-converted value of the notes was greater than the principal amount. The estimated fair value of the note at December 31, 2022 was approximately \$493.0 million. Fair value estimation was primarily based on a stock exchange, active trade on December 29, 2022 of the 3.75% Senior Convertible Note.

Capped Call

In conjunction with the pricing of the 3.75% Convertible Senior Notes, the Company entered into privately negotiated capped call transactions (the "3.75% Notes Capped Call") with certain counterparties at a price of \$16.2 million. The 3.75% Notes Capped Call covers, subject to anti-dilution adjustments, the aggregate number of shares of the Company's common stock that underlie the initial 3.75% Convertible Senior Notes and is generally expected to reduce potential dilution to the Company's common stock upon any conversion of the 3.75% Convertible Senior Notes and/or offset any cash payments the Company is required to make in excess of the principal amount of the converted notes, as the case may be, with such reduction and/or offset subject to a cap based on the cap price. The cap price of the 3.75% Notes Capped Call is initially \$6.7560 per share, which represents a premium of approximately 60% over the last then-reported sale price of the Company's common stock of \$4.11 per share on the date of the transaction and is subject to certain adjustments under the terms of the 3.75% Notes Capped Call. The 3.75% Notes Capped Call becomes exercisable if the conversion option is exercised.

The net cost incurred in connection with the 3.75% Notes Capped Call has been recorded as a reduction to additional paid-in capital in the consolidated balance sheet.

5.5% Convertible Senior Notes

In March 2018, the Company issued \$100.0 million in aggregate principal amount of the 5.5% Convertible Senior Notes due on March 15, 2023, in a private placement to qualified institutional buyers pursuant to Rule 144A under the Securities Act.

In May 2020, the Company used a portion of the net proceeds from the issuance of the 3.75% Convertible Senior Notes to finance the cash portion of the partial repurchase of the 5.5% Convertible Senior Notes, which consisted of a repurchase of approximately \$66.3 million in aggregate principal amount of the 5.5% Convertible Senior Notes in privately-negotiated transactions for aggregate consideration of \$128.9 million, consisting of approximately \$90.2 million in cash and approximately 9.4 million shares of the Company's common stock. The partial repurchase of the 5.5% Convertible Senior Notes resulted in a \$13.2 million gain on early debt extinguishment. In the fourth quarter of 2020, \$33.5 million of the remaining 5.5% Convertible Senior Notes were converted into 14.6 million shares of common stock which resulted in a gain of approximately \$4.5 million which was recorded on the consolidated statement of operations on the gain (loss) on extinguishment of debt line.

On January 7, 2021, the remaining aggregate principal of \$160 thousand aggregate principal amount of the 5.5% Convertible Senior Notes were converted into 69,808 shares of common stock. Interest expense and amortization for the period were immaterial.

Notes to Consolidated Financial Statements (Continued)

Capped Call

In conjunction with the pricing of the 5.5% Convertible Senior Notes, the Company entered into privately negotiated capped call transactions (the “5.5% Notes Capped Call”) with certain counterparties at a price of \$16.0 million to reduce the potential dilution to the Company’s common stock upon any conversion of the 5.5% Convertible Senior Notes and/or offset any cash payments the Company is required to make in excess of the principal amount of the converted 5.5% Convertible Senior Notes, as the case may be. The net cost incurred in connection with the 5.5% Notes Capped Call has been recorded as a reduction to additional paid-in capital in the consolidated balance sheets.

In conjunction with the pricing of the partial repurchase of the 5.5% Convertible Senior Notes, the Company terminated 100% of the 5.5% Notes Capped Call on June 5, 2020. As a result of the termination, the Company received \$24.2 million, which was recorded in additional paid-in capital in the consolidated balance sheets.

The net cost incurred in connection with the 5.5% Notes Capped Call has been recorded as a reduction to additional paid-in capital in the consolidated balance sheets.

In conjunction with the partial repurchase of the 5.5% Convertible Senior Notes, the Company terminated 100% of the 5.5% Notes Capped Call on June 5, 2020. As a result of the termination, the Company received \$24.2 million which was recorded in additional paid-in capital.

Common Stock Forward

In connection with the issuance of the 5.5% Convertible Senior Notes, the Company also entered into a forward stock purchase transaction (the “Common Stock Forward”), pursuant to which the Company agreed to purchase 14,397,906 shares of its common stock for settlement on or about March 15, 2023. In connection with the issuance of the 3.75% Convertible Senior Notes and the partial repurchase of the 5.5% Convertible Senior Notes, the Company amended and extended the maturity of the Common Stock Forward to June 1, 2025. The number of shares of common stock that the Company will ultimately repurchase under the Common Stock Forward is subject to customary anti-dilution adjustments. The Common Stock Forward is subject to early settlement or settlement with alternative consideration in the event of certain corporate transactions.

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

The book value of the 5.5% Notes Capped Call and Common Stock Forward are not remeasured. There were no shares of common stock settled in connection with the Common Stock Forward during the year ended December 31, 2022. During the year ended December 31, 2021, 8.1 million shares were settled and received by the Company.

16. Stockholders’ Equity

Preferred Stock

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

The Company has authorized Series A Junior Participating Cumulative Preferred Stock, par value \$0.01 per share. As of December 31, 2022 and December 31, 2021, there were no shares of Series A Junior Participating Cumulative Preferred Stock issued and outstanding.

Common Stock and Warrants

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

Notes to Consolidated Financial Statements (Continued)

In February 2021, the Company completed the previously announced sale of its common stock in connection with a strategic partnership with SK Holdings to accelerate the use of hydrogen as an alternative energy source in Asian markets. The Company sold 54,966,188 shares of its common stock to a subsidiary of SK Holdings at a purchase price of \$29.2893 per share, or an aggregate purchase price of approximately \$1.6 billion.

In January and February 2021, the Company issued and sold in a registered equity offering an aggregate of 32.2 million shares of its common stock at a purchase price of \$65.00 per share for net proceeds of approximately \$2.0 billion.

In November 2020, the Company issued and sold in a registered direct offering an aggregate of 43,700,000 shares of its common stock at a purchase price of \$22.25 per share for net proceeds of approximately \$927.3 million.

In August 2020, the Company issued and sold in a registered direct offering an aggregate of 35,276,250 shares of its common stock at a purchase price of \$10.25 per share for net proceeds of approximately \$344.4 million.

There were 590,345,658 and 577,654,900 shares of common stock outstanding as of December 31, 2022 and December 31, 2021, respectively.

On August 24, 2022, the Company and Amazon.com, Inc. (“Amazon”) entered into a Transaction Agreement (the “2022 Transaction Agreement”), under which the Company concurrently issued to Amazon.com NV Investment Holdings LLC, a wholly owned subsidiary of Amazon, a warrant (the “Amazon Warrant”) to acquire up to 16,000,000 shares of the Company’s common stock (the “Amazon Warrant Shares”), subject to certain vesting events described below. The Company and Amazon entered into the 2022 Transaction Agreement in connection with a concurrent commercial arrangement under which Amazon agreed to purchase hydrogen fuel from the Company through August 24, 2029. At December 31, 2022, 1,000,000 of the Amazon Warrant Shares issued pursuant to the 2022 Transaction Agreement had vested upon issuance.

During 2017, warrants to purchase up to 110,573,392 shares of common stock were issued in connection with transaction agreements with Amazon and Walmart, as discussed in Note 17, “Warrant Transaction Agreements.”

Accumulated Other Comprehensive Loss

Accumulated Other Comprehensive Loss comprises the following (in thousands):

	Gains and Losses on on Available-For- Sale Securities	Unrealized Gains and Losses on Available-For- Sale Securities	Foreign Currency Items	Total
Balance at December 31, 2021	\$ (150)	\$ (67)	\$ (1,315)	\$ (1,532)
Other comprehensive loss before reclassifications	—	—	—	—
Amounts reclassified from accumulated other comprehensive loss	(599)	599	—	—
Net current-period other comprehensive loss	—	(20,004)	(4,468)	(24,472)
Balance at December 31, 2022	<u>\$ (749)</u>	<u>\$ (19,472)</u>	<u>\$ (5,783)</u>	<u>\$ (26,004)</u>
Balance at December 31, 2020	\$ —	\$ 2,451	\$ —	\$ 2,451
Other comprehensive loss before reclassifications	—	—	—	—
Amounts reclassified from accumulated other comprehensive loss	(150)	150	—	—
Net current-period other comprehensive loss	—	(2,668)	(1,315)	(3,983)
Balance at December 31, 2021	<u>\$ (150)</u>	<u>\$ (67)</u>	<u>\$ (1,315)</u>	<u>\$ (1,532)</u>

17. Warrant Transaction Agreements

Amazon Transaction Agreement in 2022

On August 24, 2022, the Company and Amazon entered into a Transaction Agreement (the “2022 Transaction Agreement”), under which the Company concurrently issued to Amazon.com NV Investment Holdings LLC, a wholly owned subsidiary of Amazon, a warrant (the “2022 Amazon Warrant”) to acquire up to 16,000,000 shares (the “2022 Amazon Warrant Shares”) of the Company’s common stock, subject to certain vesting events described below. The

Notes to Consolidated Financial Statements (Continued)

Company and Amazon entered into the 2022 Transaction Agreement in connection with a concurrent commercial arrangement under which Amazon agreed to purchase hydrogen fuel from the Company through August 24, 2029.

Warrant

1,000,000 of the 2022 Amazon Warrant Shares vested immediately upon issuance of the 2022 Amazon Warrant. 15,000,000 of the 2022 Amazon Warrant Shares will vest in multiple tranches over the 7-year term of the 2022 Amazon Warrant based on payments made to the Company directly by Amazon or its affiliates, or indirectly through third parties, with 15,000,000 of the 2022 Amazon Warrant Shares fully vesting if Amazon-related payments of \$2.1 billion are made in the aggregate. The exercise price for the first 9,000,000 2022 Amazon Warrant Shares is \$22.9841 per share and the fair value on the grant date was \$20.36. The exercise price for the remaining 7,000,000 2022 Amazon Warrant Shares will be an amount per share equal to 90% of the 30-day volume weighted average share price of the Company's common stock as of the final vesting event that results in full vesting of the first 9,000,000 2022 Amazon Warrant Shares. The 2022 Amazon Warrant is exercisable through August 24, 2029.

Upon the consummation of certain change of control transactions (as defined in the 2022 Amazon Warrant) prior to the vesting of at least 60% of the aggregate 2022 Amazon Warrant Shares, the 2022 Amazon Warrant will automatically vest and become exercisable with respect to an additional number of 2022 Amazon Warrant Shares such that 60% of the aggregate 2022 Amazon Warrant Shares shall have vested. If a change of control transaction is consummated after the vesting of at least 60% of the aggregate 2022 Amazon Warrant Shares, then no acceleration of vesting will occur with respect to any of the unvested 2022 Amazon Warrant Shares as a result of the transaction. The exercise price and the 2022 Amazon Warrant Shares issuable upon exercise of the Amazon Warrant are subject to customary antidilution adjustments.

At December 31, 2022, 1,000,000 of the 2022 Amazon Warrant Shares issued pursuant to the 2022 Transaction Agreement had vested upon issuance. The warrant charge associated with the vested shares of \$20.4 million was capitalized to contract assets in our consolidated financial statements based on the grant date fair value and is subsequently amortized ratably as a reduction to revenue based on the Company's estimate of revenue over the term of the agreement. The total amount amortized during the year 2022 was \$0.5 million. The grant date fair value of tranches 2 and 3 will also be amortized ratably as a reduction to revenue based on the Company's estimate of revenue over the term of the agreement. Because the exercise price has yet to be determined, the fair value of tranche 4 will be remeasured at each reporting period end and amortized ratably as a reduction to revenue based on the Company's estimate of revenue over the term of the agreement. The total amount of provision for common stock warrants recorded as a reduction of revenue for the 2022 Amazon Warrant during the year ended December 31, 2022 was \$5.2 million.

The assumptions used to calculate the valuations as of August 24, 2022 and December 31, 2022 are as follows:

	Tranches 1-3 August 24, 2022	Tranche 4 December 31, 2022
Risk-free interest rate	3.15%	3.88%
Volatility	75.00%	75.00%
Expected average term	7 years	4 years
Exercise price	\$22.98	\$11.13
Stock price	\$20.36	\$12.37

Amazon Transaction Agreement in 2017

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

Notes to Consolidated Financial Statements (Continued)

Under the terms of the 2017 Amazon Warrant, the first tranche of the 5,819,652 of the 2017 Amazon Warrant Shares vested upon execution of the 2017 Amazon Warrant, and the remaining 2017 Amazon Warrant Shares vest based on Amazon's payment of up to \$600.0 million to the Company in connection with Amazon's purchase of goods and services from the Company. The \$6.7 million fair value of the first tranche of the 2017 Amazon Warrant Shares, was recognized as selling, general and administrative expense upon execution of the 2017 Amazon Warrant.

Provision for the second and third tranches of the 2017 Amazon Warrant Shares was recorded as a reduction of revenue, because they represent consideration payable to a customer.

The fair value of the second tranche of the 2017 Amazon Warrant Shares was measured at January 1, 2019, upon adoption of ASU 2019-08. The second tranche of 29,098,260 of the 2017 Amazon Warrant Shares vested in four equal installments, as Amazon or its affiliates, directly or indirectly through third parties, made an aggregate of \$50.0 million in payments for goods and services to the Company, up to payments totaling \$200.0 million in the aggregate. The last installment of the second tranche vested on November 2, 2020. Revenue reductions of \$497 thousand, \$9.0 million and \$4.1 million were associated with the second tranche of the 2017 Amazon Warrant Shares were recorded in 2021, 2020, and 2019, respectively, under the terms of the 2017 Amazon Warrant.

Under the terms of the 2017 Amazon Warrant, the third tranche of 20,368,784 of the 2017 Amazon Warrant Shares vests in eight equal installments, as Amazon or its affiliates, directly or indirectly through third parties, made an aggregate of \$50.0 million in payments for goods and services to the Company, up to payments totaling \$400.0 million in the aggregate. The measurement date for the third tranche of the 2017 Amazon Warrant Shares was November 2, 2020, when their exercise price was determined, as discussed further below. The fair value of the third tranche of the 2017 Amazon Warrant Shares was determined to be \$10.57 each. During 2020, revenue reductions of \$24.1 million associated with the third tranche of the 2017 Amazon Warrant Shares were recorded under the terms of the 2017 Amazon Warrant, prior to the December 31, 2020 waiver described below.

On December 31, 2020, the Company waived the remaining vesting conditions under the 2017 Amazon Warrant, which resulted in the immediate vesting of all the third tranche of the 2017 Amazon Warrant Shares and recognition of an additional \$399.7 million reduction to revenue.

The \$399.7 million reduction to revenue resulting from the December 31, 2020 waiver was determined based upon a probability assessment of whether the underlying shares would have vested under the terms of the 2017 Amazon Warrant. Based upon the Company's projections of probable future cash collections from Amazon (i.e., a Type I share based payment modification), a reduction of revenue associated with 5,354,905 of the 2017 Amazon Warrant Shares was recognized at their previously measured November 2, 2020 fair value of \$10.57 per warrant. A reduction of revenue associated with the remaining 12,730,490 of the 2017 Amazon Warrant Shares was recognized at their December 31, 2020 fair value of \$26.95 each, based upon the Company's assessment that associated future cash collections from Amazon were not deemed probable (i.e., a Type III share-based payment modification).

The \$399.7 million reduction to revenue was recognized during the year ended December 31, 2020 because the Company concluded such amount was not recoverable from the margins expected from future purchases by Amazon under the 2017 Amazon Warrant, and no exclusivity or other rights were conferred to the Company in connection with the December 31, 2020 waiver. Additionally, for the year ended December 31, 2020, the Company recorded a reduction to the provision for warrants of \$12.8 million in connection with the release of the service loss accrual.

The 2017 Amazon Warrant was exercised with respect to 24,704,450 and 17,461,994 shares of the Company's common stock as of December 31, 2022 and 2021, respectively.

At both December 31, 2022 and December 31, 2021, 55,286,696 of the 2017 Amazon Warrant Shares had vested. The total amount of provision for common stock warrants recorded as a reduction of revenue for the 2017 Amazon Warrant during the years ended December 31, 2022, 2021, and 2020 was \$0.4 million, \$0.5 million and \$420.0 million, respectively.

The exercise price for the first and second tranches of the 2017 Amazon Warrant Shares was \$1.1893 per share. The exercise price of the third tranche of the 2017 Amazon Warrant Shares was \$13.81 per share, which was determined

Notes to Consolidated Financial Statements (Continued)

pursuant to the terms of the 2017 Amazon Warrant as an amount equal to 90% of the 30-day volume weighted average share price of the Company's common stock as of November 2, 2020, the final vesting date of the second tranche of the 2017 Amazon Warrant Shares. The 2017 Amazon Warrant is exercisable through April 4, 2027. The 2017 Amazon Warrant provides for net share settlement that, if elected by the holder, will reduce the number of shares issued upon exercise to reflect net settlement of the exercise price. The 2017 Amazon Warrant provides for certain adjustments that may be made to the exercise price and the number of shares of common stock issuable upon exercise due to customary anti-dilution provisions based on future events. The 2017 Amazon Warrant is classified as an equity instrument.

Fair value of the 2017 Amazon Warrant at December 31, 2020 and November 2, 2020 was based on the Black Scholes Option Pricing Model, which is based, in part, upon level 3 unobservable inputs for which there is little or no market data, requiring the Company to develop its own assumptions. All 2017 Amazon Warrant Shares were fully vested as of December 31, 2020.

The Company used the following assumptions for its 2017 Amazon Warrant:

	December 31, 2020	November 2, 2020
Risk-free interest rate	0.58%	0.58%
Volatility	75.00%	75.00%
Expected average term	6.26	6.42
Exercise price	\$13.81	\$13.81
Stock price	\$33.91	\$15.47

Walmart Transaction Agreement

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

The majority of the Walmart Warrant Shares will vest based on Walmart's payment of up to \$600.0 million to the Company in connection with Walmart's purchase of goods and services from the Company. The first tranche of 5,819,652 Walmart Warrant Shares vested upon the execution of the Walmart Warrant and was fully exercised as of December 31, 2020. Accordingly, \$10.9 million, the fair value of the first tranche of Walmart Warrant Shares, was recorded as a provision for common stock warrants and presented as a reduction to revenue on the consolidated statements of operations during 2017. All future provision for common stock warrants is measured based on their grant-date fair value and recorded as a charge against revenue. The second tranche of 29,098,260 Walmart Warrant Shares vests in four installments of 7,274,565 Walmart Warrant Shares each time Walmart or its affiliates, directly or indirectly through third parties, make an aggregate of \$50.0 million in payments for goods and services to the Company, up to payments totaling \$200.0 million in the aggregate. The exercise price for the first and second tranches of Walmart Warrant Shares is \$2.1231 per share. After Walmart has made payments to the Company totaling \$200.0 million, the third tranche of 20,368,784 Walmart Warrant Shares will vest in eight installments of 2,546,098 Walmart Warrant Shares each time Walmart or its affiliates, directly or indirectly through third parties, make an aggregate of \$50.0 million in payments for goods and services to the Company, up to payments totaling \$400.0 million in the aggregate. The exercise price of the third tranche of Walmart Warrant Shares will be an amount per share equal to 90% of the 30-day volume weighted average share price of the common stock as of the final vesting date of the second tranche of Walmart Warrant Shares, provided that, with limited exceptions, the exercise price for the third tranche will not be lower than \$1.1893. The Walmart Warrant is exercisable through July 20, 2027.

The Walmart Warrant provides for net share settlement that, if elected by the holder, will reduce the number of shares issued upon exercise to reflect net settlement of the exercise price. The Walmart Warrant provides for certain

Notes to Consolidated Financial Statements (Continued)

adjustments that may be made to the exercise price and the number of shares of common stock issuable upon exercise due to customary anti-dilution provisions based on future events. The Walmart Warrant is classified as an equity instrument. The warrant had been exercised with respect to 13,094,217 shares of the Company's common stock as of both December 31, 2022 and 2021.

At December 31, 2022 and December 31, 2021, 27,643,347 and 20,368,782 of the Walmart Warrant Shares had vested, respectively. The total amount of provision for common stock warrants recorded as a reduction of revenue for the Walmart Warrant during the years ended December 31, 2022, 2021, and 2020 \$7.1 million, \$6.1 million, and \$5.0 million, respectively.

Fair value of the Walmart Warrant was based on the Black Scholes Option Pricing Model, which is based, in part, upon level 3 unobservable inputs for which there is little or no market data, requiring the Company to develop its own assumptions. Except for the third tranche, all existing unvested Walmart Warrant Shares are measured using a measurement date of January 1, 2019, the adoption date, in accordance with ASU 2019-08.

The Company used the following assumptions for its Walmart Warrant:

	January 1, 2019
Risk-free interest rate	2.63%
Volatility	95.00%
Expected average term	8.55
Exercise price	\$2.12
Stock price	\$1.24

The assumptions used to calculate the valuations of the final tranche of the Walmart Warrant as of December 31, 2022 are as follows:

	December 31, 2022
Risk-free interest rate	3.92%
Volatility	75.00%
Expected average term	3.5 years
Exercise price	\$11.13
Stock price	\$12.37

Notes to Consolidated Financial Statements (Continued)

18. Revenue

Disaggregation of revenue

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

Major products/services lines

	Year Ended December 31,		
	2022	2021	2020
Sales of fuel cell systems	\$ 207,691	\$ 225,229	\$ (55,091)
Sales of hydrogen infrastructure	141,528	135,055	(43,391)
Sales of electrolyzers	28,463	16,667	4,187
Sales of engineered equipment	93,489	7,571	—
Services performed on fuel cell systems and related infrastructure	35,280	26,706	(9,801)
Power Purchase Agreements	47,183	35,153	26,620
Fuel delivered to customers and related equipment	57,196	46,917	(16,072)
Sales of cryogenic equipment	87,761	8,255	—
Other	2,849	789	311
Net revenue	<u>\$ 701,440</u>	<u>\$ 502,342</u>	<u>\$ (93,237)</u>

Contract balances

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

	December 31,	December 31,
	2022	2021
Accounts receivable	\$ 129,450	\$ 92,675
Contract assets	104,287	38,757
Deferred revenue and contract liabilities	229,898	183,090

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

The deferred revenue and contract liabilities relate to the advance consideration received from customers for services that will be recognized over time (primarily fuel cell and related infrastructure services). Deferred revenue and contract liabilities also include advance consideration received from customers prior to delivery of products. These amounts are included within deferred revenue and other contract liabilities on the consolidated balance sheet.

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

Contract assets

	December 31, 2022	December 31, 2021
Transferred to receivables from contract assets recognized at the beginning of the period	\$ (33,394)	\$ (14,638)
Contract assets assumed as part of acquisition	—	9,960
Contract assets related to warrants	26,455	—
Revenue recognized and not billed as of the end of the period	72,469	25,246
Net change in contract assets	<u>\$ 65,530</u>	<u>\$ 20,568</u>

Notes to Consolidated Financial Statements (Continued)

Deferred revenue and contract liabilities

	December 31, 2022	December 31, 2021
Increases due to cash received, net of amounts recognized as revenue during the period	\$ 200,347	\$ 182,052
Contract liabilities assumed as part of acquisitions	10,011	35,727
Revenue recognized that was included in the contract liability balance as of the beginning of the period	(163,550)	(110,974)
Net change in deferred revenue and contract liabilities	<u>\$ 46,808</u>	<u>\$ 106,805</u>

Estimated future revenue

The following table includes estimated revenue included in the backlog expected to be recognized in the future (sales of fuel cell systems, equipment, and hydrogen installations are expected to be recognized as revenue within one year; sales of services, PPAs, and fuel are expected to be recognized as revenue over five to ten years) related to performance obligations that are unsatisfied (or partially unsatisfied) at the end of the reporting period, including provision for common stock warrants (in thousands):

	December 31, 2022
Sales of fuel cell systems	\$ 38,234
Sales of hydrogen installations and other infrastructure	31,876
Sales of electrolyzers	303,038
Sales of engineered equipment	18,500
Services performed on fuel cell systems and related infrastructure	126,814
Power Purchase Agreements	375,802
Fuel delivered to customers and related equipment	93,798
Sales of cryogenic equipment	193,644
Total estimated future revenue	<u>\$ 1,181,706</u>

19. Employee Benefit Plans

2011 and 2021 Stock Option and Incentive Plan

On May 12, 2011, the Company's stockholders approved the 2011 Stock Option and Incentive Plan (the "2011 Plan"). The 2011 Plan provided for the issuance of up to a maximum number of shares of common stock equal to the sum of (i) 1,000,000, plus (ii) the number of shares of common stock underlying any grants pursuant to the 2011 Plan or the Plug Power Inc. 1999 Stock Option and Incentive Plan that are forfeited, canceled, repurchased or are terminated (other than by exercise). The shares were issued pursuant to stock options, stock appreciation rights, restricted stock awards and certain other equity-based awards granted to employees, directors and consultants of the Company. No further grants may be made under the 2011 Plan after May 12, 2021. Through various amendments to the 2011 Plan approved by the Company's stockholders, the number of shares of the Company's common stock authorized for issuance under the 2011 Plan had been increased to 42.4 million. In July 2021, the 2021 Stock Option Incentive Plan (the "2021 Plan") was approved by the Company's stockholders.

The 2021 Plan provides for the issuance of up to a maximum number of shares of common stock equal to the sum of (i) 22,500,000 shares, plus the 473,491 shares remaining under the 2011 Plan as of the effective date of that the 2021 Plan, plus (iii) shares underlying any awards under the 2021 Plan and the 2011 Plan that are forfeited, canceled, cash-settled or otherwise terminated, other than by exercise. In June 2022, the Company's stockholders approved an increase in the number of shares of the Company's common stock authorized for issuance under the 2021 Plan to 40,030,000. Stock-based compensation costs recognized, excluding the Company's matching contributions to the Plug Power Inc. 401(k) Savings & Retirement Plan and quarterly Board compensation, were approximately \$169.8 million, \$72.4 million and \$14.4 million for the years ended December 31, 2022, 2021, and 2020, respectively, in connection with the 2011 and 2021 Plans.

Notes to Consolidated Financial Statements (Continued)

The components and classification of stock-based compensation expense, excluding the Company's matching contributions to the Plug Power Inc. 401(k) Savings & Retirement Plan and quarterly Board compensation, were as follows (in thousands):

	Year ended December 31,		
	2022	2021	2020
Cost of sales	\$ 7,259	\$ 1,965	\$ 324
Research and development	6,369	5,983	1,624
Selling, general and administrative	156,127	64,443	12,444
	<u>\$ 169,755</u>	<u>\$ 72,391</u>	<u>\$ 14,392</u>

Option Awards

The Company issues options that become exercisable based on time and/or market conditions, and are classified as equity awards.

Service Stock Options Awards

To date, service-based stock option awards ("Service Stock Options") granted under the 2011 and 2021 Plans have vesting provisions ranging from one to three years in duration and expire ten years after issuance. Service Stock Options for employees issued under these plans generally vest in equal annual installments over three years and expire ten years after issuance. Service Stock Options granted to members of the Board generally vest one year after issuance. The Company estimates the fair value of the Service Stock Options using a Black-Scholes valuation model, and the resulting fair value is recorded as compensation cost on a straight-line basis over the option vesting period. Key inputs and assumptions used to estimate the fair value of the Service Stock Options include the grant price of the award, the expected option term, volatility of the Company's stock, an appropriate risk-free rate, and the Company's dividend yield. Estimates of fair value are not intended to predict actual future events or the value ultimately realized by employees who receive equity awards, and subsequent events are not indicative of the reasonableness of the original estimates of fair value made by the Company. The assumptions made for purposes of estimating fair value under the Black-Scholes model for the 3,261,724, 1,942,335, and 3,509,549 Service Stock Options granted during years ended December 31, 2022, 2021, and 2020, respectively were as follows:

	December 31, 2022	December 31, 2021	December 31, 2020
Expected term of options (years)	5	3-5	6
Risk free interest rate	1.26% - 4.34%	0.61% - 1.23%	0.37% - 1.37%
Volatility	73.38% - 85.97%	72.46% - 76.60%	64.19% - 68.18%

There was no expected dividend yield for the Service Stock Options granted.

Beginning in the second quarter of 2021, the expected term is based on the Company's historical experience with employee early exercise behavior. The estimated stock price volatility is derived from the Company's actual historic stock prices over the expected term, which represents the Company's best estimate of expected volatility. Prior to this, the Company used the simplified method in determining its expected term of all its Service Stock Option grants in all periods presented. The simplified method was used because the Company did not believe historical exercise data provided a reasonable basis for the expected term of its grants, primarily as a result of the limited number of Service Stock Option exercises that had historically occurred.

Notes to Consolidated Financial Statements (Continued)

The following table reflects the Service Stock Option activity for the year ended December 31, 2022:

	Shares	Weighted Average Exercise Price	Weighted Average Remaining Contractual Terms	Aggregate Intrinsic Value
Options outstanding at December 31, 2021	\$ 9,786,909	\$ 11.65	7.70	\$ 172,412
Options exercisable at December 31, 2021	4,724,624	4.37	6.50	112,715
Options unvested at December 31, 2021	5,062,285	18.44	8.80	59,697
Granted	3,261,724	20.25	—	—
Exercised	(757,424)	2.96	—	—
Forfeited	(212,940)	24.25	—	—
Options outstanding at December 31, 2022	\$ 12,078,269	\$ 14.34	7.57	\$ 42,835
Options exercisable at December 31, 2022	6,661,969	8.41	6.40	42,182
Options unvested at December 31, 2022	\$ 5,416,300	\$ 21.63	9.01	\$ 653

The weighted average grant-date fair value of the Service Stock Options granted during for the years ended December 31, 2022, 2021 and 2020 was \$13.39, \$19.80, and \$7.22 per share, respectively. The total intrinsic fair value of Service Stock Options exercised during the years ended December 31, 2022, 2021, and 2020, was approximately \$15.1 million, \$115.5 million, and \$145.0 million. The fair value of Service Stock Options vested during the years ended December 31, 2022, 2021, and 2020 was \$22.6 million, \$11.0 million, and \$5.9 million, respectively.

Compensation cost associated with Service Stock Options represented approximately \$27.5 million, \$17.4 million, and \$41.5 million of the total share-based payment expense recorded for the years ended December 31, 2022, 2021 and 2020, respectively. As of December 31, 2022 and 2021, there was approximately \$59.8 million and \$46.2 million of unrecognized compensation cost related to Service Stock Options to be recognized over a weighted average remaining period of 2.11 years.

Performance Stock Option Awards

The Company grants performance-based stock option awards (“Performance Stock Options”) to the Company’s Chief Executive Officer and certain other executive officers. These Performance Stock Options are subject to both market conditions tied to the achievement of stock price hurdles and time-based vesting; therefore, a Monte Carlo Simulation was utilized to determine the grant date fair value with the associated expense recognized over the requisite service period. The Performance Stock Options performance-based conditions will be satisfied as the volume weighted average price of the Company’s common stock during any 30 consecutive trading day period in the relevant performance period following the grant date of the stock options (“VWAP”) equals or exceeds certain levels. These levels range between \$35 and \$100. The Performance Stock Options granted have a required service periods ranging between 2 and 3 years. The Performance Stock Options will vest and become exercisable ratably over the service period. There will be no interpolation for the Chief Executive Officer’s Performance Stock Option if the VWAP falls between any two stock price hurdles, except in the event of a change in control. For awards granted to other executives if the VWAP falls between two of the stock price hurdles, an incremental number of shares will be earned based on linear interpolation in \$1 increments. Failure to achieve any of the stock price hurdles applicable to a Performance Stock Option during the required performance period will result in the applicable shares not becoming exercisable and being forfeited. The Performance Stock Options have a maximum term of seven years from the grant date.

Key inputs and assumptions used to estimate the fair value of Performance Stock Options include the grant price of the awards, the expected option term, VWAP hurdle rates, volatility of the Company’s stock, an appropriate risk-free rate, and the Company’s dividend yield. Estimates of fair value are not intended to predict actual future events or the value ultimately realized by employees who receive equity awards, and subsequent events are not indicative of the reasonableness of the original estimates of fair value made by the Company.

Notes to Consolidated Financial Statements (Continued)

The following table presents key assumptions used to estimate the fair value of the performance stock option awards granted in 2022 and 2021:

	December 31, 2022	December 31, 2021
Remaining VWAP performance period (years)	3	3
Risk-free interest rate	3.10%	1.12%
Expected volatility	75.00%	70.00%
Closing stock price on grant date	\$ 26.38	\$ 26.92

The expected term was determined based on term features within the grants that decreases the overall grant pool if options are exercised early (0-3 years) reducing the maximum future payout and the Company's historical experience with employee early exercise behavior. The estimated stock price volatility was derived from the Company's actual historic stock prices over the past five years, which represents the Company's best estimate of expected volatility.

The following table reflects the Performance Stock Option activity for the year ended December 31, 2022. Solely for the purposes of this table, the number of shares is based on participants earning the maximum number of shares underlying the Performance Stock Options (i.e., 200% of the target number of shares).

	Shares	Weighted Average Exercise Price	Weighted Average Remaining Contractual Terms	Aggregate Intrinsic Value
Options outstanding at December 31, 2021	14,020,000	\$ 26.92	6.70	\$ 18,336
Options exercisable at December 31, 2021	—	—	—	—
Options unvested at December 31, 2021	14,020,000	26.92	6.70	18,336
Granted	1,500,000	26.38	6.64	—
Exercised	—	—	—	—
Forfeited	—	—	—	—
Options outstanding at December 31, 2022	15,520,000	\$ 26.87	5.81	\$ —
Options exercisable at December 31, 2022	1,391,000	26.92	5.73	—
Options unvested at December 31, 2022	14,129,000	\$ 26.86	5.82	\$ —

The weighted average grant-date fair value of Performance Stock Options granted during the years ended December 31, 2022 and 2021 was \$9.73 and \$12.70, respectively. There were no Performance Stock Options exercised during the years ended December 31, 2022 and 2021.

As of December 31, 2022, there were 2,782,000 unvested shares underlying Performance Stock Options for which the employee requisite service period has not been rendered but are expected to vest. The aggregate intrinsic value of these unvested Performance Stock Options is \$0 as of December 31, 2022. The weighted average remaining contractual term of these unvested Performance Stock Options was 5.73 years as of December 31, 2022.

Compensation cost associated with Performance Stock Options represented approximately \$95.7 and \$27.8 million of the total share-based payment expense recorded for the years ended December 31, 2022 and 2021, respectively. As of December 31, 2022, there was approximately \$70.4 million of unrecognized compensation cost related to Performance Stock Options to be recognized over a weighted average remaining period of 1.88 years.

Restricted Stock Awards

Restricted stock awards generally vest in equal installments over a period of one to three years. Restricted stock awards are valued based on the closing price of the Company's common stock on the date of grant, and compensation cost is recorded on a straight-line basis over the vesting period. The Company recorded expense associated with its restricted stock awards of approximately \$46.5 million, \$27.2 million, and \$7.6 million, for the years ended December 31, 2022, 2021, and 2020, respectively. Additionally, for the years ended December 31, 2022, 2021, and 2020, there was \$110.3 million, \$74.5 million, and \$41.5 million, respectively, of unrecognized compensation cost related to restricted stock awards to be recognized over a weighted average remaining period of 2.16 years.

Notes to Consolidated Financial Statements (Continued)

A summary of restricted stock award activity for the year ended December 31, 2022 is as follows (in thousands except share amounts):

	Shares	Weighted Average Grant Date Fair Value	Aggregate Intrinsic Value
Unvested restricted stock at December 31, 2021	4,851,873	\$ 21.59	\$ 136,968
Granted	4,289,682	20.28	—
Vested	(2,628,397)	(13.96)	—
Forfeited	(236,782)	23.84	—
Unvested restricted stock at December 31, 2022	6,276,376	\$ 21.56	\$ 77,639

The weighted average grant-date fair value of the restricted stock awards granted during the years ended December 31, 2022, 2021, and 2020, was \$20.28, \$32.35, and \$12.61, respectively. The total fair value of restricted stock awards vested for the years ended December 31, 2022, 2021, and 2020 was \$36.7 million, \$76.0 million, and \$23.3 million, respectively.

401(k) Savings & Retirement Plan

The Company offers a 401(k) Savings & Retirement Plan to eligible employees meeting certain age and service requirements. This plan permits participants to contribute 100% of their salary, up to the maximum allowable by the Internal Revenue Service regulations. Participants are immediately vested in their voluntary contributions plus actual earnings or less actual losses thereon. Participants are vested in the Company's matching contribution based on years of service completed. Participants are fully vested upon completion of three years of service. During 2018, the Company began funding its matching contribution in a combination of cash and common stock. The Company issued 442,056 shares of common stock, 90,580 shares of common stock, and 403,474 shares of common stock pursuant to the Plug Power Inc. 401(k) Savings & Retirement Plan during the years ended December 31, 2022, 2021, and 2020, respectively.

The Company's expense for this plan was approximately \$9.2 million, \$4.3 million, and \$2.6 million for the years ended December 31, 2022, 2021, and 2020, respectively.

Non-Employee Director Compensation

Each non-employee director is paid an annual retainer for his or her service, in the form of either cash or stock compensation. This annual retainer is paid in four quarterly installments. The Company granted 21,886, 12,258, and 36,175 shares of common stock to non-employee directors as quarterly compensation for the years ended December 31, 2022, 2021 and 2020, respectively. All common stock issued related to this annual retainer that is paid quarterly, is fully vested at the time of issuance and is valued at fair value on the date of issuance. The Company's share-based compensation expense in connection with non-employee director quarterly compensation was approximately \$390 thousand, \$372 thousand and \$228 thousand for the years ended December 31, 2022, 2021, and 2020, respectively.

20. Income Taxes

The components of loss before income taxes and the income tax (expense) benefit for the years ended December 31, 2022, 2021, and 2020, by jurisdiction, are as follows (in thousands):

	2022			2021			2020		
	U.S.	Foreign	Total	U.S.	Foreign	Total	U.S.	Foreign	Total
Loss before income taxes	\$ (697,342)	\$ (25,827)	\$ (723,169)	\$ (466,825)	\$ (9,337)	\$ (476,162)	\$ (624,302)	\$ (2,698)	\$ (627,000)
Income tax (expense) benefit	868	(1,707)	(839)	16,540	(343)	16,197	30,845	—	30,845
Net loss attributable to the Company	<u>\$ (696,474)</u>	<u>\$ (27,534)</u>	<u>\$ (724,008)</u>	<u>\$ (450,285)</u>	<u>\$ (9,680)</u>	<u>\$ (459,965)</u>	<u>\$ (593,457)</u>	<u>\$ (2,698)</u>	<u>\$ (596,155)</u>

Notes to Consolidated Financial Statements (Continued)

The significant components of current and deferred income tax expense (benefit) for the years ended December 31, 2022, 2021, and 2020, by jurisdiction, are as follows (in thousands):

	2022			2021			2020		
	U.S.	Foreign	Total	U.S.	Foreign	Total	U.S.	Foreign	Total
Current income tax (benefit) expense	\$ —	\$ 668	\$ 668	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —
Deferred tax (benefit) expense	(42,705)	6,968	(35,737)	(51,999)	1,064	(50,935)	(31,408)	(67)	(31,475)
Net operating loss carryforward generated	(92,030)	4,332	(87,698)	(105,498)	(2,038)	(107,536)	(51,849)	(438)	(52,287)
Valuation allowance increase (decrease)	133,867	(10,261)	123,606	140,957	1,317	142,274	52,412	505	52,917
Expense (benefit) for income taxes	<u>\$ (868)</u>	<u>\$ 1,707</u>	<u>\$ 839</u>	<u>\$ (16,540)</u>	<u>\$ 343</u>	<u>\$ (16,197)</u>	<u>\$ (30,845)</u>	<u>\$ —</u>	<u>\$ (30,845)</u>

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

	2022	2021	2020
U.S. Federal statutory tax rate	(21.0)%	(21.0)%	(21.0)%
Deferred state taxes	0.0 %	(0.6)%	(2.3)%
Common stock warrant liability	0.0 %	(6.0)%	13.4 %
Section 162M Disallowance	1.9 %	1.1 %	0.0 %
Equity Compensation	(0.7)%	(4.3)%	0.0 %
Provision to return and deferred tax asset adjustments	4.6 %	(1.3)%	0.0 %
Change in U.S. Federal/Foreign statutory tax rate	0.0 %	0.3 %	0.0 %
Other, net	0.6 %	(1.5)%	(3.5)%
Change in valuation allowance	14.8 %	29.9 %	8.4 %
	<u>0.1 %</u>	<u>(3.4)%</u>	<u>(5.0)%</u>

Deferred income taxes reflect the net tax effects of temporary differences between the carrying amounts of certain assets and liabilities for financial reporting and the amounts used for income tax purposes. The Company has recorded a net deferred tax liability in other non-current liabilities, at December 31, 2022 and 2021 of approximately \$11.5 million

Notes to Consolidated Financial Statements (Continued)

and \$5.0 million, respectively. Significant components of the Company's deferred tax assets and liabilities as of December 31, 2022 and 2021 are as follows (in thousands):

	U.S.		Foreign		Total	
	2022	2021	2022	2021	2022	2021
Deferred revenue	33,172	24,514	137	146	33,309	24,660
Interest expense	31,368	29,095	—	—	31,368	29,095
Other reserves and accruals	26,591	23,398	287	7,332	26,878	30,730
Tax credit carryforwards	14,949	8,960	—	1,289	14,949	10,249
Amortization of stock-based compensation	30,217	13,904	—	—	30,217	13,904
Non-compensatory warrants	6,268	4,115	—	—	6,268	4,115
Capitalized research & development expenditures	60,588	37,912	—	4,613	60,588	42,525
Right of use liability (operating leases)	32,616	6,118	259	485	32,875	6,603
Net operating loss carryforwards	297,790	205,760	7,720	12,052	305,510	217,812
Total deferred tax asset	533,559	353,776	8,403	25,917	541,962	379,693
Valuation allowance	(429,291)	(295,424)	(8,183)	(18,444)	(437,474)	(313,868)
Net deferred tax assets	\$ 104,268	\$ 58,352	\$ 220	\$ 7,473	\$ 104,488	\$ 65,825
Intangible assets	(29,731)	(23,244)	(9,938)	(11,098)	(39,669)	(34,342)
Convertible debt	(26,989)	(27,346)	—	—	(26,989)	(27,346)
Right of use asset (operating leases)	(40,194)	(247)	(260)	(485)	(40,454)	(732)
Property, plant and equipment and right of use assets	(7,383)	(8,489)	(1,500)	—	(8,883)	(8,489)
Deferred tax liability	\$ (104,297)	\$ (59,326)	\$ (11,699)	\$ (11,583)	\$ (115,996)	\$ (70,909)
Net	\$ (29)	\$ (974)	\$ (11,479)	\$ (4,110)	\$ (11,508)	\$ (5,084)

The Company has recorded a valuation allowance, as a result of uncertainties related to the realization of its net deferred tax asset, at December 31, 2022 and 2021 of approximately \$437.5 million and \$313.9 million, respectively. A reconciliation of the current year change in valuation allowance is as follows (in thousands):

	U.S.	Foreign	Total
Increase (decrease) in valuation allowance for current year increase in net operating losses	\$ 119,784	(5,924)	\$ 113,860
Increase (decrease) in valuation allowance for current year net increase in deferred tax assets other than net operating losses	22,081	(12,265)	9,816
Increase (decrease) in valuation allowance due to change in tax rates	(7,998)	7,928	(70)
Net increase (decrease) in valuation allowance	\$ 133,867	\$ (10,261)	\$ 123,606

With the exception of the Company's Netherlands subsidiary, all deferred tax assets are offset by a full valuation allowance because it is more likely than not that the tax benefits of the net operating loss carryforwards and other deferred tax assets will not be realized.

Under Section 382 of the Internal Revenue Code of 1986, as amended (the "Code"), the use of loss carryforwards may be limited if a change in ownership of a company occurs. If it is determined that due to transactions involving the Company's shares owned by its 5 percent or greater stockholders a change of ownership has occurred under the provisions of Section 382 of the Code, the Company's federal and state NOL carryforwards could be subject to significant Section 382 limitations.

The Company's deferred tax assets include \$1.4 billion of U.S. net operating loss carryforwards. The NOL carryforwards available at December 31, 2022, include \$1.2 billion of NOL that was generated in 2018 through 2022, that do not expire. The remainder, if unused, will expire at various dates from 2034 through 2037. Based on analysis of stock transactions, an ownership change as defined under Section 382 of the Code occurred in 2013, which imposes a \$13.5

Notes to Consolidated Financial Statements (Continued)

million limit on the utilization of pre-change losses that can be used to offset taxable income in future years. The pre-change NOL carryforwards will expire, if unused, at various dates from 2021 through 2033. The Company continuously analyzes stock transactions and has determined that no ownership changes have occurred since 2013 that would further limit the utilization of NOLs. Therefore, NOLs of \$1.4 billion incurred in post-change years are not subject to limitation.

Approximately \$14.9 million of research credit carryforwards generated after the most recent IRC Section 382 ownership change are included in the Company's deferred tax assets. Due to limitations under IRC Section 382, research credit carryforwards existing prior to the most recent IRC Section 382 ownership change will not be used and are not reflected in the Company's gross deferred tax asset at December 31, 2022. The remaining credit carryforwards will expire during the periods 2033 through 2042.

At December 31, 2022, the Company has unused Canadian net operating loss carryforwards of approximately \$1.3 million. The net operating loss carryforwards if unused will expire at various dates between 2040 through 2043. At December 31, 2022, the Company has no remaining Scientific Research and Experimental Development ("SR&ED") expenditures or ITC credit carryforwards.

At December 31, 2022, the Company has unused French net operating loss carryforwards of approximately \$27.3 million. The net operating loss may carryforward indefinitely or until the Company changes its activity.

At December 31, 2022, the Company no longer has Netherlands net operating loss carryforwards. As the carryforward amount of \$2.9 million as of December 31, 2021 was utilized in the current year.

As of December 31, 2022, the Company has no un-repatriated foreign earnings or unrecognized tax benefits.

The Inflation Reduction Act of 2022 (IRA) was signed into law on August 16, 2022. Key provisions under the IRA include a 15% corporate alternative minimum tax imposed on certain large corporations and the extension and expansion of clean energy tax incentives. The 15% corporate alternative minimum tax is not expected to affect the Company in the near future. The Company is in the process of evaluating the impact of the clean energy tax incentives on its businesses and is awaiting U.S. Department of the Treasury and Internal Revenue Service guidance.

The Company files income tax returns in the U.S. federal jurisdiction and various state and foreign jurisdictions. In the normal course of business, the Company is subject to examination by taxing authorities. Open tax years in the U.S. range from 2019 and forward. Open tax years in the foreign jurisdictions range from 2012 and forward. However, upon examination in subsequent years, if net operating losses carryforwards and tax credit carryforwards are utilized, the US and foreign jurisdictions can reduce net operating loss carryforwards and tax credit carryforwards utilized in the year being examined if they do not agree with the carryforward amount. As of December 31, 2022, the Company was not under audit in the U.S. or non-U.S. taxing jurisdictions.

The Tax Cuts and Jobs Act of 2017 requires taxpayers to capitalize and amortize research and development costs pursuant to Internal Revenue Code ("IRC") Section 174. The requirement was effective for the Company beginning after December 31, 2021. We recorded a deferred tax asset of approximately \$19.0 million due to Section 174 capitalization. We note that the Company is currently in a full valuation allowance as it relates to the U.S. taxing jurisdiction as a result there is no impact to cash taxes payable.

The Company has not changed its overall conclusion with respect to the need for a valuation allowance against its net deferred tax assets, which remain fully reserved, with the exception of \$20.0 million of DTAs recorded in the Netherlands, which do not require a reserve as the Netherlands entity has approximately \$31.5 million of DTLs that provide a sufficient source of income to support realization of its DTAs.

21. Commitments and Contingencies

Restricted Cash

In connection with certain of the above noted sale/leaseback agreements, cash of \$383.7 million and \$275.1 million, respectively, was required to be restricted as security as of December 31, 2022 and 2021, which will be released

Notes to Consolidated Financial Statements (Continued)

over the lease term. As of December 31, 2022 and 2021, the Company also had certain letters of credit backed by security deposits totaling \$379.6 million and \$286.0 million, respectively, that are security for the above noted sale/leaseback agreements.

As of December 31, 2022 and 2021, the Company had \$75.5 million and \$67.7 million, respectively, held in escrow related to the construction of certain hydrogen plants.

The Company also had \$5.0 million, \$2.3 million, and \$1.8 million of consideration held by our paying agent in connection with the Applied Cryo, Joule, and CIS acquisitions, respectively, reported as restricted cash as of December 31, 2022, with a corresponding accrued liability on the Company's consolidated balance sheet. The Company had \$10.0 million of consideration held by our paying agent in connection with the Applied Cryo reported as restricted cash as of December 31, 2021, with a corresponding accrued liability on the Company's consolidated balance sheet. Additionally, the Company had \$10.8 million and \$12.2 million in restricted cash as collateral resulting from the Frames acquisition as of December 31, 2022 and 2021, respectively.

Litigation

Legal matters are defended and handled in the ordinary course of business. Liabilities for loss contingencies arising from claims, assessments, litigation, fines, and penalties and other sources are recorded when it is probable that a liability has been incurred and the amount can be reasonably estimated. Legal costs incurred in connection with loss contingencies are expensed as incurred. The Company has not recorded any accruals related to any legal matters.

Concentrations of credit risk

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

At December 31, 2022, one customer comprised approximately 24.9% of the total accounts receivable balance. At December 31, 2021, one customer comprised approximately 46.6% of the total accounts receivable balance.

For the year ended December 31, 2022, three customers accounted for 51.2% of total consolidated revenues. For the year ended December 31, 2021, three customers accounted for 75.7% of total consolidated revenues.

On December 31, 2020, the Company waived the remaining vesting conditions under the Amazon Warrant, which resulted in a reduction in revenue of \$399.7 million, which resulted in negative consolidated revenue of \$93.2 million for the year ended December 31, 2020. See Note 17, "Warrant Transaction Agreements," to the consolidated financial statements for further information. Total revenue in 2020 for this customer was negative \$310.1 million. For the year ended December 31, 2020, this customer accounted for (332.4)% of our total consolidated revenues which included a provision for warrant charge of \$420.0 million, which was recorded as a reduction of revenue. Additionally, 156.2% of our total consolidated revenues were associated primarily with two other customers.

22. Segment and Geographic Area Reporting

Our organization is managed from a sales perspective based on "go-to-market" sales channels, emphasizing shared learning across end-user applications and common supplier/vendor relationships. These sales channels are structured to serve a range of customers for our products and services. As a result of this structure, we concluded that we have one operating and reportable segment — the design, development and sale of green hydrogen products and solutions that help customers meet their business goals while decarbonizing their operations. Our chief executive officer was identified as the chief operating decision maker (CODM). All significant operating decisions made by management are

Notes to Consolidated Financial Statements (Continued)

largely based upon the analysis of Plug on a total company basis, including assessments related to our incentive compensation plans.

	Revenues			Long-Lived Assets	
	Year ended December 31,			As of December 31,	
	2022	2021	2020	2022	2021
North America	\$ 579,218	\$ 476,246	\$ (100,523)	\$ 1,209,900	\$ 570,777
Europe	46,033	20,814	3,929	13,215	2,608
Asia	50,498	718	147	—	—
Other	25,691	4,564	3,210	—	171
Total	\$ 701,440	\$ 502,342	\$ (93,237)	\$ 1,223,115	\$ 573,556

23. Subsequent Events

We have evaluated events as of March 1, 2023 and have not identified any subsequent events.

SIGNATURES

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

PLUG POWER INC.

By: /s/ ANDREW MARSH
Andrew Marsh
President, Chief Executive Officer and Director

Date: March 1, 2023

FIFTH AMENDED AND RESTATED**BY-LAWS****OF****PLUG POWER INC.**

(the "Corporation")

Adopted by the Board of Directors on 23rd of February, 2023**Article I**Stockholders**SECTION 1. Annual Meeting.**

The annual meeting of stockholders (any such meeting being referred to in these By-laws as an "Annual Meeting") shall be held at the hour, date and place within or without the United States that is fixed by the Board of Directors, which time, date and place may subsequently be changed at any time, before or after the notice for such meeting has been sent to the stockholders, by vote of the Board of Directors. The Board of Directors may, in its sole discretion, determine that a meeting of stockholders shall not be held at any place, but may instead be held solely by means of remote communication as authorized by Section 211(a)(2) of the General Corporation Law of the State of Delaware (the "DGCL"). In the absence of any such designation or determination, stockholders' meetings shall be held at the Corporation's principal executive office. If no Annual Meeting has been held for a period of thirteen (13) months after the Corporation's last Annual Meeting, a special meeting in lieu thereof may be held, and such special meeting shall have, for the purposes of these By-laws or otherwise, all the force and effect of an Annual Meeting. Any and all references hereafter in these By-laws to an Annual Meeting or Annual Meetings also shall be deemed to refer to any special meeting(s) in lieu thereof.

SECTION 2. Notice of Stockholder Business and Nominations.**(a) Annual Meetings of Stockholders.**

(1) Nominations of persons for election to the Board of Directors of the Corporation (the "Board of Directors") and the proposal of other business to be considered by the stockholders may be brought before an Annual Meeting (i) by or at the direction of the Board of Directors or (ii) by any stockholder of the Corporation who was a stockholder of record at the time of giving of notice of the Annual Meeting provided for in these By-laws, who is entitled to vote at the meeting, who is present (in person or by proxy) at the meeting and who complies with the notice procedures set forth in these By-laws as to such nomination or business. For the avoidance of doubt, the foregoing clause (ii) shall be the exclusive means for a stockholder to bring nominations or business properly before an Annual Meeting (other than matters properly brought under Rule 14a-8 (or any successor rule) under the Securities Exchange Act of 1934, as amended (the "Exchange Act")), and such stockholder must comply with the

notice and other procedures set forth in Article I, Section 2(a)(2), (3), and (4) of these By-laws to bring such nominations or business properly before an Annual Meeting. In addition to the other requirements set forth in these By-laws, for any proposal of business to be considered at an Annual Meeting, it must be a proper subject for action by stockholders of the Corporation under Delaware law.

(2) For nominations or other business to be properly brought before an Annual Meeting by a stockholder pursuant to clause (ii) of Article I, Section 2(a)(1) of these By-laws, the stockholder must (i) have given Timely Notice (as defined below) thereof in writing to the Secretary of the Corporation, (ii) have provided any updates or supplements to such notice at the times and in the forms required by these By-laws and (iii) together with the beneficial owner(s), if any, on whose behalf the nomination or business proposal is made, have acted in accordance with the representations set forth in the Solicitation Statement (as defined below) required by these By-laws. To be timely, a stockholder's written notice shall be received by the Secretary at the principal executive offices of the Corporation not later than the close of business on the ninetieth (90th) day nor earlier than the close of business on the one hundred twentieth (120th) day prior to the one-year anniversary of the preceding year's Annual Meeting; provided, however, that in the event the Annual Meeting is first convened more than thirty (30) days before or more than sixty (60) days after such anniversary date, or if no Annual Meeting were held in the preceding year, notice by the stockholder to be timely must be received by the Secretary of the Corporation not later than the close of business on the later of the ninetieth (90th) day prior to the scheduled date of such Annual Meeting or the tenth (10th) day following the day on which public announcement of the date of such meeting is first made (such notice within such time periods shall be referred to as "Timely Notice"). Such stockholder's Timely Notice shall set forth:

(A) as to each person whom the stockholder proposes to nominate for election or reelection as a director, (i) the name, age, business address and residence address of the nominee, (ii) the principal occupation or employment of the nominee, (iii) the class and number of shares of capital stock of the Corporation that are held of record or are beneficially owned by the nominee or their affiliates or associates and any Synthetic Equity Interest (as defined below) held or beneficially owned by the nominee or their affiliates or associates, (iv) a description of all arrangements or understandings between or among the stockholder and each nominee and any other person or persons (naming such person or persons) pursuant to which the nominations are to be made by the stockholder or concerning the nominee's potential service on the Board of Directors, (v) a questionnaire with respect to the background and qualifications of the nominee completed by the nominee in the form provided by the Corporation (which questionnaire shall be provided by the Secretary upon written request), (vi) a representation and agreement in the form provided by the Corporation (which form shall be provided by the Secretary upon written request) that: (a) such proposed nominee is not and will not become party to any agreement, arrangement or understanding with any person or entity as to how such proposed nominee, if elected as a director of the Corporation, will act or vote on any issue or question (a "Voting Commitment") that has not been disclosed to the Corporation; (b) such proposed nominee is not and will not become a party to any agreement, arrangement, or understanding with any person or entity other than the Corporation with respect to any direct or indirect compensation, reimbursement, or indemnification in connection with service or action as a director that has not been disclosed to the Corporation; (c) such proposed nominee would, if

elected as a director, comply with all applicable rules and regulations of the exchanges upon which shares of the Corporation's capital stock trade, each of the Corporation's corporate governance, ethics, conflict of interest, confidentiality, stock ownership and trading policies and guidelines applicable generally to the Corporation's directors and, if elected as a director of the Corporation, such person currently would be in compliance with any such policies and guidelines that have been publicly disclosed; (d) such proposed nominee intends to serve as a director for the full term for which he or she is to stand for election; and (e) such proposed nominee will promptly provide to the Corporation such other information as it may reasonably request; and (vii) any other information relating to such proposed nominee that is required to be disclosed in solicitations of proxies for election of directors in an election contest, or is otherwise required, in each case pursuant to Regulation 14A under the Exchange Act (including without limitation such person's written consent to being named in the proxy statement as a nominee and to serving as a director if elected);

(B) as to any other business that the stockholder proposes to bring before the meeting, a brief description of the business desired to be brought before the meeting, the text, if any, of any resolutions or Bylaw amendment proposed for adoption, the reasons for conducting such business at the meeting, and any material interest in such business of each Proposing Person (as defined below);

(C) (i) the name and address of the stockholder giving the notice, as they appear on the Corporation's books, and the names and addresses of the other Proposing Persons (if any) and (ii) as to each Proposing Person, the following information: (a) the class or series and number of all shares of capital stock of the Corporation which are, directly or indirectly, owned beneficially or of record by such Proposing Person or any of its affiliates or associates (as such terms are defined in Rule 12b-2 promulgated under the Exchange Act), including any shares of any class or series of capital stock of the Corporation as to which such Proposing Person or any of its affiliates or associates has a right to acquire beneficial ownership at any time in the future (whether or not such right is exercisable immediately or only after the passage of time or upon the satisfaction of any conditions or both) pursuant to any agreement, arrangement or understanding (whether or not in writing), (b) all Synthetic Equity Interests (as defined below) in which such Proposing Person or any of its affiliates or associates, directly or indirectly, holds an interest including a description of the material terms of each such Synthetic Equity Interest, including without limitation, identification of the counterparty to each such Synthetic Equity Interest and disclosure, for each such Synthetic Equity Interest, as to (1) whether or not such Synthetic Equity Interest conveys any voting rights, directly or indirectly, in such shares to such Proposing Person or any of its affiliates or associates, (2) whether or not such Synthetic Equity Interest is required to be, or is capable of being, settled through delivery of such shares and (3) whether or not such Proposing Person, any of its affiliates or associates and/or, to the extent known, the counterparty to such Synthetic Equity Interest has entered into other transactions that hedge or mitigate the economic effect of such Synthetic Equity Interest, (c) any proxy (other than a revocable proxy given in response to a public proxy solicitation made pursuant to, and in accordance with, the Exchange Act), agreement, arrangement, understanding or relationship pursuant to which such Proposing Person or any of its affiliates or associates has or shares a right to, directly or indirectly, vote any shares of any class or series of capital stock of the Corporation, (d) any rights to dividends or other distributions on the shares of any class or series of capital stock of the Corporation, directly or indirectly, owned beneficially by such

Proposing Person or any of its affiliates or associates that are separated or separable from the underlying shares of the Corporation, (e) any performance-related fees (other than an asset based fee) that such Proposing Person or any of its affiliates or associates, directly or indirectly, is entitled to receive based on any increase or decrease in the value of shares of any class or series of capital stock of the Corporation or any Synthetic Equity Interests, (f)(1) if such Proposing Person is not a natural person, the identity of the natural person or persons associated with such Proposing Person responsible for (i) the formulation of and decision to propose the director nomination or business to be brought before the meeting and (ii) making voting and investment decisions on behalf of the Proposing Person (irrespective of whether such person or persons have “beneficial ownership” for purposes of Rule 13d-3 of the Exchange Act of any securities owned of record or beneficially by the Proposing Person) (such person or persons, the “Responsible Person”), the manner in which such Responsible Person was selected, any fiduciary duties owed by such Responsible Person to the equity holders or other beneficiaries of such Proposing Person and, the qualifications and background of such Responsible Person or (2) if such Proposing Person is a natural person, the qualifications and background of such natural person, (g) any equity interests or any Synthetic Equity Interests in any principal competitor of the Corporation beneficially owned by such Proposing Person or any of its affiliates or associates, (h) any direct or indirect interest of such Proposing Person or any of its affiliates or associates in any contract with the Corporation, any affiliate of the Corporation or any principal competitor of the Corporation (including, without limitation, in any such case, any employment agreement, collective bargaining agreement or consulting agreement), (i) any pending or threatened litigation in which such Proposing Person or any of its affiliates or associates is a party or material participant involving the Corporation or any of its officers or directors, or any affiliate of the Corporation, (j) any material transaction occurring during the prior twelve months between such Proposing Person or any of its affiliates or associates, on the one hand, and the Corporation, any affiliate of the Corporation or any principal competitor of the Corporation, on the other hand, and (k) any other information relating to such Proposing Person or any of its affiliates or associates that would be required to be disclosed in a proxy statement or other filing required to be made in connection with solicitations of proxies or consents by such Proposing Person in support of the business proposed to be brought before the meeting pursuant to Section 14(a) of the Exchange Act (the disclosures to be made pursuant to the foregoing clauses (a) through (k) are referred to, collectively, as “Material Ownership Interests”); provided, however, that the Material Ownership Interests shall not include any such disclosures with respect to the ordinary course business activities of any broker, dealer, commercial bank, trust company or other nominee who is a Proposing Person solely as a result of being the stockholder of record directed to prepare and submit the notice required by these Bylaws on behalf of a beneficial owner;

(D) (i) a description of all agreements, arrangements or understandings to which any Proposing Person or any of its affiliates or associates is a party (whether the counterparty or counterparties are a Proposing Person or any affiliate or associate thereof, on the one hand, or one or more other third parties, on the other hand, (including any proposed nominee(s)) (a) pertaining to the nomination(s) or other business proposed to be brought before the meeting of stockholders or (b) entered into for the purpose of acquiring, holding, disposing or voting of any shares of any class or series of capital stock of the Corporation (which description shall identify the name of each other person who is party to such an agreement, arrangement or understanding), and (ii) identification of the names and addresses of other stockholders (including beneficial owners) known by any of the Proposing Persons to

support such nominations or other business proposal(s), and to the extent known the class and number of all shares of the Corporation's capital stock owned beneficially or of record by such other stockholder(s) or other beneficial owner(s); and

(E) a statement (i) that the stockholder is a holder of record of capital stock of the Corporation entitled to vote at such meeting, a representation that such stockholder intends to appear in person or by proxy at the meeting to propose such business or nominees and an acknowledgement that, if such stockholder (or a qualified representative of such stockholder) does not appear to present such business or proposed nominees, as applicable, at such meeting, the Corporation need not present such business or proposed nominees for a vote at such meeting, notwithstanding that proxies in respect of such vote may have been received by the Corporation, (ii) whether or not the stockholder giving the notice and/or the other Proposing Person(s), if any, (a) will deliver a proxy statement and form of proxy to holders of, in the case of a business proposal, at least the percentage of voting power of all of the shares of capital stock of the Corporation required under applicable law to approve the proposal or, in the case of a nomination or nominations, at least sixty seven percent (67%) of the voting power of all of the shares of capital stock of the Corporation entitled to vote on the election of directors or (b) otherwise solicit proxies or votes from stockholders in support of such proposal or nomination, as applicable, (iii) providing a representation as to whether or not such Proposing Person intends to solicit proxies in support of director nominees other than the Corporation's director nominees in accordance with Rule 14a-19 promulgated under the Exchange Act, and (iv) that the stockholder will provide any other information relating to such item of business that would be required to be disclosed in a proxy statement or other filing required to be made in connection with solicitations of proxies in support of the business proposed to be brought before the meeting pursuant to Section 14(a) of the Exchange Act (such statement, the "Solicitation Statement").

For purposes of this Article I of these By-laws, the term "Proposing Person" shall mean the following persons: (i) the stockholder of record providing the notice of nominations or business proposed to be brought before a stockholders' meeting, and (ii) the beneficial owner(s), if different, on whose behalf the nominations or business proposed to be brought before a stockholders' meeting is made. For purposes of this Section 2 of Article I of these By-laws, the term "Synthetic Equity Interest" shall mean any transaction, agreement or arrangement (or series of transactions, agreements or arrangements), including, without limitation, any derivative, swap, hedge, repurchase or so-called "stock borrowing" agreement or arrangement, the purpose or effect of which is to, directly or indirectly: (a) give a person or entity economic benefit and/or risk similar to ownership of shares of any class or series of capital stock of the Corporation, in whole or in part, including due to the fact that such transaction, agreement or arrangement provides, directly or indirectly, the opportunity to profit, or share in any profit, or avoid a loss from any increase or decrease in the value of any shares of any class or series of capital stock of the Corporation, (b) mitigate loss to, reduce the economic risk of or manage the risk of share price changes for, any person or entity with respect to any shares of any class or series of capital stock of the Corporation, (c) otherwise provide in any manner the opportunity to profit, or share in any profit, or avoid a loss from any decrease in the value of any shares of any class or series of capital stock of the Corporation, or (d) increase or decrease the voting power of any person or entity with respect to any shares of any class or series of capital stock of the Corporation.

(3) A stockholder providing Timely Notice of nominations or business proposed to be brought before an Annual Meeting shall further update and supplement such notice, if necessary, so that the information (including, without limitation, the Material Ownership Interests information) provided or required to be provided in such notice pursuant to these By-laws shall be true and correct as of the record date for the meeting and as of the date that is ten (10) business days prior to such Annual Meeting, and such update and supplement shall be received by the Secretary at the principal executive offices of the Corporation not later than the close of business on the fifth (5th) business day after the record date for the Annual Meeting (in the case of the update and supplement required to be made as of the record date), and not later than the close of business on the eighth (8th) business day prior to the date of the Annual Meeting (in the case of the update and supplement required to be made as of ten (10) business days prior to the meeting). For the avoidance of doubt, the obligation to update as set forth in Section 2(a)(3) of these Bylaws shall not limit the Corporation's rights with respect to any deficiencies in any notice provided by a stockholder, extend any applicable deadlines hereunder, or enable or be deemed to permit a stockholder who has previously submitted notice hereunder to amend or update any proposal or nomination or to submit any new proposal, including by changing or adding nominees, matters, business and/or resolutions proposed to be brought before a meeting of the stockholders. Notwithstanding the foregoing, if a Proposing Person no longer plans to solicit proxies in accordance with its representation pursuant to Article I, Section 2(a)(2)(E) of these Bylaws, such Proposing Person shall inform the Corporation of this change by delivering a written notice to the Secretary at the principal executive offices of the Corporation no later than two (2) business days after making the determination not to proceed with a solicitation of proxies. A Proposing Person shall also update its notice so that the information required by Article I, Section 2(a)(2)(C) of these Bylaws is current through the date of the meeting or any adjournment, postponement, or rescheduling thereof, and such update shall be delivered in writing to the secretary at the principal executive offices of the Corporation no later than two (2) business days after the occurrence of any material change to the information previously disclosed pursuant to Article I, Section 2(a)(2)(C) of these Bylaws.

(4) Notwithstanding anything in the second sentence of Article I, Section 2(a)(2) of these By-laws to the contrary, in the event that the number of directors to be elected to the Board of Directors of the Corporation is increased and there is no public announcement naming all of the nominees for director or specifying the size of the increased Board of Directors made by the Corporation at least ten (10) days before the last day a stockholder may deliver a notice of nomination in accordance with the second sentence of Article I, Section 2(a)(2) of these Bylaws, a stockholder's notice required by these By-laws shall also be considered timely, but only with respect to nominees for any new positions created by such increase, if it shall be received by the Secretary of the Corporation not later than the close of business on the tenth (10th) day following the day on which such public announcement is first made by the Corporation.

(b) General.

(1) Only such persons who are nominated in accordance with the provisions of these By-laws shall be eligible for election and to serve as directors and only such business shall be conducted at an Annual Meeting as shall have been brought before the meeting in accordance with the provisions of this Bylaw or in accordance with Rule 14a-8 under the

Exchange Act. The Board of Directors or a designated committee thereof shall have the power to determine whether a nomination or any business proposed to be brought before the meeting was made in accordance with the provisions of these By-laws. If neither the Board of Directors nor such designated committee makes a determination as to whether any stockholder proposal or nomination was made in accordance with the provisions of these By-laws, the presiding officer of the Annual Meeting shall have the power and duty to determine whether the stockholder proposal or nomination was made in accordance with the provisions of these By-laws. If the Board of Directors or a designated committee thereof or the presiding officer, as applicable, determines that any stockholder proposal or nomination was not made in accordance with the provisions of these By-laws, such proposal or nomination shall be disregarded and shall not be presented for action at the Annual Meeting.

(2) Except as otherwise required by law, nothing in this Article I, Section 2 shall obligate the Corporation or the Board of Directors to include in any proxy statement or other stockholder communication distributed on behalf of the Corporation or the Board of Directors information with respect to any nominee for director or any other matter of business submitted by a stockholder.

(3) Notwithstanding the foregoing provisions of this Article I, Section 2, if the nominating or proposing stockholder (or a qualified representative of the stockholder) does not appear at the Annual Meeting to present a nomination or any business, such nomination or business shall be disregarded, notwithstanding that proxies in respect of such vote may have been received by the Corporation. For purposes of this Article I, Section 2, to be considered a qualified representative of the proposing stockholder, a person must be authorized by a written instrument executed by such stockholder or an electronic transmission delivered by such stockholder to act for such stockholder as proxy at the meeting of stockholders and such person must produce such written instrument or electronic transmission, or a reliable reproduction of the written instrument or electronic transmission, to the presiding officer at the meeting of stockholders.

(4) For purposes of these By-laws, “public announcement” shall mean disclosure in a press release reported by the Dow Jones News Service, Associated Press or comparable national news service or in a document publicly filed by the Corporation with the Securities and Exchange Commission pursuant to Section 13, 14 or 15(d) of the Exchange Act.

(5) Notwithstanding the foregoing provisions of these By-laws, a stockholder shall also comply with all applicable requirements of the Exchange Act and the rules and regulations thereunder, including, but not limited to, Rule 14a-19 of the Exchange Act, with respect to the matters set forth in these By-laws. If a stockholder fails to comply with any applicable requirements of the Exchange Act, including, but not limited to, Rule 14a-19 promulgated thereunder, such stockholder’s proposed nomination or proposed business shall be deemed to have not been made in compliance with this Bylaw and shall be disregarded.

(6) Further notwithstanding the foregoing provisions of this Bylaw, unless otherwise required by law, (i) no Proposing Person shall solicit proxies in support of director nominees other than the Corporation’s nominees unless such Proposing Person has complied with Rule 14a-19 promulgated under the Exchange Act in connection with the

solicitation of such proxies, including the provision to the Corporation of notices required thereunder with timely notice, and (ii) if any Proposing Person (A) provides notice pursuant to Rule 14a-19(b) promulgated under the Exchange Act, (B) subsequently fails to comply with the requirements of Rule 14a-19(a)(2) or Rule 14a-19(a)(3) promulgated under the Exchange Act, including the provision to the Corporation of notices required thereunder with timely notice, and (C) no other Proposing Person has provided notice pursuant to, and in compliance with, Rule 14a-19 under the Exchange Act that it intends to solicit proxies in support of the election of such proposed nominee in accordance with Rule 14a-19(b) under the Exchange Act, then such proposed nominee shall be disqualified from nomination, the Corporation shall disregard the nomination of such proposed nominee and no vote on the election of such proposed nominee shall occur. Upon request by the Corporation, if any Proposing Person provides notice pursuant to Rule 14a-19(b) promulgated under the Exchange Act, such Proposing Person shall deliver to the Corporation, no later than five (5) business days prior to the applicable meeting date, reasonable evidence that it has met the requirements of Rule 14a-19(a)(3) promulgated under the Exchange Act.

(7) The number of nominees a stockholder may nominate for election at the Annual Meeting (or in the case of a stockholder giving the notice on behalf of a beneficial owner, the number of nominees a stockholder may nominate for election at the Annual Meeting on behalf of such beneficial owner) shall not exceed the number of directors to be elected at such Annual Meeting.

SECTION 3. Special Meetings. Except as otherwise required by statute and subject to the rights, if any, of the holders of any series of preferred stock, special meetings of the stockholders of the Corporation may be called only by or at the direction of the Board of Directors. The Board of Directors may postpone or reschedule any previously scheduled special meeting of stockholders. Only those matters set forth in the notice of the special meeting may be considered or acted upon at a special meeting of stockholders of the Corporation. Nominations of persons for election to the Board of Directors and stockholder proposals of other business shall not be brought before a special meeting of stockholders to be considered by the stockholders unless such special meeting is held in lieu of an annual meeting of stockholders in accordance with Article I, Section 1 of these By-laws, in which case such special meeting in lieu thereof shall be deemed an Annual Meeting for purposes of these By-laws and the provisions of Article I, Section 2 of these By-laws shall govern such special meeting.

SECTION 4. Notice of Meetings; Adjournments.

A notice of each Annual Meeting stating the hour, date and place, if any, of such Annual Meeting and the means of remote communication, if any, by which stockholders and proxyholders may be deemed to be present in person and vote at such Annual Meeting, shall be given not less than ten (10) days nor more than sixty (60) days before the Annual Meeting, to each stockholder entitled to vote thereat by delivering such notice to such stockholder or by mailing it, postage prepaid, addressed to such stockholder at the address of such stockholder as it appears on the Corporation's stock transfer books. Without limiting the manner by which notice may otherwise be given to stockholders, any notice to stockholders may be given by electronic transmission in the manner provided in Section 232 of the DGCL.

Notice of all special meetings of stockholders shall be given in the same manner as provided for Annual Meetings, except that the notice of all special meetings shall state the purpose or purposes for which the meeting has been called.

Notice of an Annual Meeting or special meeting of stockholders need not be given to a stockholder if a waiver of notice is executed, or waiver of notice by electronic transmission is provided, before or after such meeting by such stockholder or if such stockholder attends such meeting, unless such attendance is for the express purpose of objecting at the beginning of the meeting to the transaction of any business because the meeting was not lawfully called or convened.

The Board of Directors may postpone and reschedule or cancel any previously scheduled Annual Meeting or special meeting of stockholders and any record date with respect thereto, regardless of whether any notice or public disclosure with respect to any such meeting has been sent or made pursuant to Section 2 of this Article I of these By-laws or otherwise. In no event shall the public announcement of an adjournment, postponement or rescheduling of any previously scheduled meeting of stockholders commence a new time period for the giving of a stockholder's notice under this Article I of these By-laws.

When any meeting is convened, the presiding officer or the stockholders present or represented by proxy at such meeting may adjourn the meeting from time to time for any reason, regardless of whether a quorum is present, to reconvene at any other time and at any place at which a meeting of stockholders may be held under these Bylaws. When any Annual Meeting or special meeting of stockholders is adjourned to another hour, date or place (including an adjournment taken to address a technical failure to convene or continue a meeting using remote communication), notice need not be given of the adjourned meeting if the time, place, if any, thereof, and the means of remote communications, if any, by which stockholders and proxy holders may be deemed to be present in person and vote at such adjourned meeting are (i) announced at the meeting at which the adjournment is taken, (ii) displayed, during the time scheduled for the meeting, on the same electronic network used to enable stockholders and proxy holders to participate in the meeting by means of remote communication or (iii) set forth in the notice of meeting given in accordance with this Section 4; provided, however, that if the adjournment is for more than thirty (30) days from the meeting date, or if after the adjournment a new record date is fixed for the adjourned meeting, notice of the adjourned meeting and the means of remote communications, if any, by which stockholders and proxyholders may be deemed to be present in person and vote at such adjourned meeting shall be given to each stockholder of record entitled to vote thereat and each stockholder who, by law or under the Certificate of Incorporation of the Corporation (as the same may hereafter be amended and/or restated, the "Certificate") or these By-laws, is entitled to such notice.

SECTION 5. Quorum.

Except as otherwise provided by law, the Certificate or these Bylaws, at each meeting of stockholders, the presence in person or by remote communication, if applicable, or represented by proxy, of the holders of a majority in voting power of the outstanding shares of stock entitled to vote at the meeting shall be necessary and sufficient to constitute a quorum. If less than a quorum is present at a meeting, the holders of voting stock representing a majority of the voting

power present at the meeting or the presiding officer may adjourn the meeting from time to time, and the meeting may be held as adjourned without further notice, except as provided in Section 4 of this Article I. At such adjourned meeting at which a quorum is present, any business may be transacted which might have been transacted at the meeting as originally noticed. The stockholders present at a duly constituted meeting may continue to transact business until adjournment, notwithstanding the withdrawal of enough stockholders to leave less than a quorum.

SECTION 6. Voting and Proxies.

(a) The stockholders entitled to vote at any meeting of stockholders shall be determined in accordance with the provisions of Section Article IV, Section 5 of these Bylaws, subject to Section 217 (relating to voting rights of fiduciaries, pledgors and joint owners of stock) and Section 218 (relating to voting trusts and other voting agreements) of the DGCL. Stockholders shall have one vote for each share of stock entitled to vote owned by them of record according to the stock ledger of the Corporation as of the record date, unless otherwise provided by law or by the Certificate. Stockholders may vote either (i) in person, (ii) by written proxy or (iii) by a transmission permitted by Section 212(c) of the DGCL. Any copy, facsimile telecommunication or other reliable reproduction of the writing or transmission permitted by Section 212(c) of the DGCL may be substituted for or used in lieu of the original writing or transmission for any and all purposes for which the original writing or transmission could be used, provided that such copy, facsimile telecommunication or other reproduction shall be a complete reproduction of the entire original writing or transmission. Proxies shall be filed in accordance with the procedures established for the meeting of stockholders. Except as otherwise limited therein or as otherwise provided by law, proxies authorizing a person to vote at a specific meeting shall entitle the persons authorized thereby to vote at any adjournment of such meeting, but they shall not be valid after final adjournment of such meeting. A proxy with respect to stock held in the name of two or more persons shall be valid if executed by or on behalf of any one of them unless at or prior to the exercise of the proxy the Corporation receives a specific written notice to the contrary from any one of them. In the event the Corporation receives proxies for disqualified or withdrawn nominees for the Board of Directors, such votes for such disqualified or withdrawn nominees in the proxies will be treated as abstentions.

(b) Any stockholder directly or indirectly soliciting proxies from other stockholders must use a proxy card color other than white, which shall be reserved for the exclusive use by the Board of Directors.

SECTION 7. Action at Meeting.

When a quorum is present at any meeting of stockholders, any matter before any meeting of stockholders (other than an election of a director or directors) shall be decided by a majority of the votes properly cast for and against such matter, except where a larger vote is required by law, by the Certificate or by these By-laws. Any election of directors by stockholders shall be determined by a plurality of the votes properly cast on the election of directors.

SECTION 8. Stockholder Lists.

The Corporation shall prepare, no later than the tenth (10th) day before each Annual Meeting or special meeting of stockholders, a complete list of the stockholders entitled to vote at the meeting, arranged in alphabetical order, and showing the address of each stockholder and the number of shares registered in the name of each stockholder. Such list shall be open to the examination of any stockholder for any purpose germane to the meeting for a period of ten (10) days ending on the day before the meeting date in the manner provided by law.

SECTION 9. Conduct of Meeting. The Board of Directors may adopt by resolution such rules, regulations, and procedures for the conduct of any meeting of stockholders as it shall deem appropriate. Except to the extent inconsistent with rules, regulations, and procedures adopted by the Board of Directors, the chair of the meeting shall have the right to prescribe such rules, regulations, and procedures and to do all such acts, as, in the judgment of such chair, are necessary, appropriate, or convenient for the proper conduct of the meeting. Such rules, regulations, or procedures, whether adopted by the Board of Directors or the chair of the meeting, may include, without limitation, the following: (a) the establishment of an agenda for the meeting; (b) rules and procedures for maintaining order at the meeting and the safety of those present at the meeting; (c) limitations on attendance at or participation in the meeting to stockholders of record of the Corporation, their duly authorized and constituted proxies, or such other persons as the chair of the meeting shall determine; (d) restrictions on entry to the meeting after the time fixed for the commencement thereof; (e) the determination of the circumstances in which any person may make a statement or ask questions and limitations on the time allotted to questions or comments; (f) the determination of when the polls shall open and close for any given matter to be voted on at the meeting; (g) the exclusion or removal of any stockholders or any other individual who refuses to comply with meeting rules, regulations, or procedures; (h) restrictions on the use of audio and video recording devices, cell phones, and other electronic devices; (i) rules, regulations, and procedures for compliance with any federal, state, or local laws or regulations (including those concerning safety, health, or security); (j) procedures (if any) requiring attendees to provide the Corporation advance notice of their intent to attend the meeting; and (k) rules, regulations, or procedures regarding the participation by means of remote communication of stockholders and proxy holders not physically present at a meeting, whether such meeting is to be held at a designated place or solely by means of remote communication. Unless and to the extent determined by the Board of Directors or the chair of the meeting, the chair of the meeting shall not be obligated to adopt or follow any technical, formal, or parliamentary rules or principles of procedure.

SECTION 10. Voting Procedures and Inspectors of Elections.

The Corporation shall, in advance of any meeting of stockholders, appoint one or more inspectors to act at the meeting and make a written report thereof. The Corporation may designate one or more persons as alternate inspectors to replace any inspector who fails to act. If no inspector or alternate is able to act at a meeting of stockholders, the presiding officer shall appoint one or more inspectors to act at the meeting. Any inspector may, but need not, be an officer, employee or agent of the Corporation. Each inspector, before entering upon the discharge of his or her duties, shall take and sign an oath faithfully to execute the duties of inspector with strict impartiality and according to the best of his or her ability. The inspectors

shall perform such duties as are required by the DGCL, including the counting of all votes and ballots. The inspectors may appoint or retain other persons or entities to assist the inspectors in the performance of the duties of the inspectors. The presiding officer may review all determinations made by the inspectors, and in so doing the presiding officer shall be entitled to exercise his or her sole judgment and discretion and he or she shall not be bound by any determinations made by the inspectors. All determinations by the inspectors and, if applicable, the presiding officer, shall be subject to further review by any court of competent jurisdiction.

Article II

Directors

SECTION 1. Powers.

The business and affairs of the Corporation shall be managed by or under the direction of the Board of Directors except as otherwise provided by the Certificate or required by law.

SECTION 2. Number and Terms.

The number of directors of the Corporation shall be fixed solely and exclusively by resolution duly adopted from time to time by the Board of Directors, provided the Board of Directors shall consist of at least one (1) member. The directors shall hold office in the manner provided in the Certificate.

SECTION 3. Qualification.

No director need be a stockholder of the Corporation.

SECTION 4. Vacancies.

Vacancies in the Board of Directors shall be filled in the manner provided in the Certificate.

SECTION 5. Removal.

Directors may be removed from office only in the manner provided in the Certificate and applicable law.

SECTION 6. Resignation.

A director may resign at any time by electronic transmission or by giving written notice to the Chairperson of the Board, if one is elected, the President or the Secretary. A resignation shall be effective upon receipt, unless the resignation otherwise provides.

SECTION 7. Regular Meetings.

Regular meetings of the Board of Directors may be held at such hour, date and place as the Board of Directors may by resolution from time to time determine and publicize by means of

reasonable notice given to any director who is not present at the meeting at which such resolution is adopted.

SECTION 8. Special Meetings.

Special meetings of the Board of Directors may be called, orally or in writing, by or at the request of a majority of the directors, the Chairperson of the Board, if one is elected, or the President. The person calling any such special meeting of the Board of Directors may fix the hour, date and place thereof.

SECTION 9. Notice of Meetings.

Notice of the hour, date and place of all special meetings of the Board of Directors shall be given to each director by the Secretary or an Assistant Secretary, or in case of the death, absence, incapacity or refusal of such persons, by the Chairperson of the Board, if one is elected, or the President or such other officer designated by the Chairperson of the Board, if one is elected, or the President. Notice of any special meeting of the Board of Directors shall be given to each director in person, by telephone, or by facsimile, electronic mail, or other form of electronic communication, sent to his or her business or home address, at least twenty-four (24) hours in advance of the meeting, or by written notice mailed to his or her business or home address, at least forty-eight (48) hours in advance of the meeting *provided, however*, that if the Chairperson of the Board or the President determines that it is otherwise necessary or advisable to hold the meeting sooner, then the Chairperson of the Board or the President, as the case may be, may prescribe a shorter time period for notice to be given personally or by telephone, facsimile, electronic mail or other similar means of communication. Such notice shall be deemed to be delivered when hand delivered to such address; read to such director by telephone; deposited in the mail so addressed; with postage thereon prepaid, if mailed; or dispatched or transmitted if sent by facsimile transmission or by electronic mail or other form of electronic communications.

A written waiver of notice signed or electronically transmitted before or after a meeting by a director and filed with the records of the meeting shall be deemed to be equivalent to notice of the meeting. The attendance of a director at a meeting shall constitute a waiver of notice of such meeting, except where a director attends a meeting for the express purpose of objecting at the beginning of the meeting to the transaction of any business because such meeting is not lawfully called or convened. Except as otherwise required by law, by the Certificate or by these By-laws, neither the business to be transacted at, nor the purpose of, any meeting of the Board of Directors need be specified in the notice or waiver of notice of such meeting.

SECTION 10. Quorum.

At any meeting of the Board of Directors, a majority of the total number of directors shall constitute a quorum for the transaction of business, but if less than a quorum is present at a meeting, a majority of the directors present may adjourn the meeting from time to time, and the meeting may be held as adjourned without further notice. Any business which might have been transacted at the meeting as originally noticed may be transacted at such adjourned meeting at

which a quorum is present. For purposes of this Section 10, the total number of directors includes any unfilled vacancies on the Board of Directors.

SECTION 11. Action at Meeting.

At any meeting of the Board of Directors at which a quorum is present, the vote of a majority of the directors present shall constitute action by the Board of Directors, unless otherwise required by law, by the Certificate or by these By-laws.

SECTION 12. Action by Consent.

Any action required or permitted to be taken at any meeting of the Board of Directors may be taken without a meeting if all members of the Board of Directors consent thereto in writing or by electronic transmission and the writing or writings or electronic transmission or transmissions are filed with the records of the meetings of the Board of Directors. Such filing shall be in paper form if the minutes are maintained in paper form and shall be in electronic form if the minutes are maintained in electronic form. Such consent shall be treated as a resolution of the Board of Directors for all purposes.

SECTION 13. Manner of Participation.

Directors may participate in meetings of the Board of Directors by means of video conference, conference telephone or other communications equipment by means of which all directors participating in the meeting can hear each other, and participation in a meeting in accordance herewith shall constitute presence in person at such meeting for purposes of these By-laws.

SECTION 14. Presiding Director. The Board of Directors shall designate a representative to preside over all meetings of the Board of Directors, provided that if the Board of Directors does not so designate such a presiding director or such designated presiding director is unable to so preside or is absent, then the Chairperson of the Board, if one is elected, shall preside over all meetings of the Board of Directors. If both the designated presiding director, if one is so designated, and the Chairperson of the Board, if one is elected, are unable to preside or are absent, the Board of Directors shall designate an alternate representative to preside over a meeting of the Board of Directors.

SECTION 15. Committees.

The Board of Directors, by vote of a majority of the directors then in office, may elect one or more committees, including, without limitation, a Compensation Committee, a Corporate Governance and Nominating Committee and an Audit Committee, and may delegate thereto some or all of its powers to such committee(s) except those which by law, by the Certificate or by these By-laws may not be delegated. Except as the Board of Directors may otherwise determine, any such committee may make rules for the conduct of its business, but unless otherwise provided by the Board of Directors or in such rules, its business shall be conducted so far as possible in the same manner as is provided by these By-laws for the Board of Directors. All members of such committees shall hold such offices at the pleasure of the Board of Directors. The Board of Directors may abolish any such committee at any time. Any committee

to which the Board of Directors delegates any of its powers or duties shall keep records of its meetings and shall report its action to the Board of Directors. The Corporation elects to be governed by the provisions of Section 141(c)(2) of the DGCL.

SECTION 16. Compensation of Directors.

Directors shall receive such compensation for their services as shall be determined by a majority of the Board of Directors, or a designated committee thereof, provided that directors who are serving the Corporation as employees shall not receive any salary or other compensation for their services as directors of the Corporation.

Article III

Officers

SECTION 1. Enumeration.

The officers of the Corporation shall consist of a President, a Treasurer, a Secretary and such other officers, including, without limitation, a Chairperson of the Board of Directors, a Chief Executive Officer and one or more Vice Presidents (including Executive Vice Presidents or Senior Vice Presidents), Assistant Vice Presidents, Assistant Treasurers and Assistant Secretaries, as the Board of Directors may determine. Any number of offices may be held by the same person. The salaries and other compensation of the officers of the Corporation will be fixed by or in the manner designated by the Board of Directors or a committee thereof to which the Board of Directors has delegated such responsibility.

SECTION 2. Election.

The Board of Directors shall elect the President, the Treasurer and the Secretary. Other officers may be elected by the Board of Directors at such regular annual meeting of the Board of Directors or at any other regular or special meeting.

SECTION 3. Qualification.

No officer need be a stockholder or a director.

SECTION 4. Tenure.

Except as otherwise provided by the Certificate or by these By-laws, each of the officers of the Corporation shall hold office until the regular annual meeting of the Board of Directors following the next Annual Meeting and until his or her successor is elected and qualified or until his or her earlier resignation or removal.

SECTION 5. Resignation and Removal.

Any officer may resign by delivering his or her written or electronically transmitted resignation to the Corporation addressed to the President or the Secretary, and such resignation shall be effective upon receipt, unless the resignation otherwise provides. Any resignation is

without prejudice to the rights, if any, of the Corporation under any contract to which the officer is a party. Except as otherwise provided by law or by resolution of the Board of Directors, the Board of Directors may remove any officer with or without cause by the affirmative vote of a majority of the directors then in office. Except as the Board of Directors may otherwise determine, no officer who resigns or is removed shall have any right to any compensation as an officer for any period following his or her resignation or removal, or any right to damages on account of such removal, whether his or her compensation be by the month or by the year or otherwise, unless such compensation is expressly provided in a duly authorized written agreement with the Corporation.

SECTION 6. Absence or Disability.

In the event of the absence or disability of any officer, the Board of Directors may designate another officer to act temporarily in place of such absent or disabled officer.

SECTION 7. Vacancies.

Any vacancy in any office may be filled for the unexpired portion of the term by the Board of Directors.

SECTION 8. President.

The President shall, subject to the direction of the Board of Directors, have such powers and shall perform such duties as the Board of Directors may from time to time designate.

SECTION 9. Chairperson of the Board.

The Chairperson of the Board, if one is elected, shall have such powers and shall perform such duties as the Board of Directors may from time to time designate.

SECTION 10. Chief Executive Officer.

The Chief Executive Officer, if one is elected, shall have such powers and shall perform such duties as the Board of Directors may from time to time designate.

SECTION 11. Vice Presidents and Assistant Vice Presidents.

Any Vice President (including any Executive Vice President or Senior Vice President) and any Assistant Vice President shall have such powers and shall perform such duties as the Board of Directors or the Chief Executive Officer may from time to time designate.

SECTION 12. Treasurer and Assistant Treasurers.

The Treasurer shall, subject to the direction of the Board of Directors and except as the Board of Directors or the Chief Executive Officer may otherwise provide, have general charge of the financial affairs of the Corporation and shall cause to be kept accurate books of account. The Treasurer shall have custody of all funds, securities, and valuable documents of the Corporation.

He or she shall have such other duties and powers as may be designated from time to time by the Board of Directors or the Chief Executive Officer.

Any Assistant Treasurer shall have such powers and perform such duties as the Board of Directors or the Chief Executive Officer may from time to time designate.

SECTION 13. Secretary and Assistant Secretaries.

The Secretary shall record all the proceedings of the meetings of the stockholders and the Board of Directors (including committees of the Board of Directors) in books kept for that purpose. In his or her absence from any such meeting, a temporary secretary chosen at the meeting shall record the proceedings thereof. The Secretary shall have charge of the stock ledger (which may, however, be kept by any transfer or other agent of the Corporation). The Secretary shall have custody of the seal of the Corporation, and the Secretary, or an Assistant Secretary, shall have authority to affix it to any instrument requiring it, and, when so affixed, the seal may be attested by his or her signature or that of an Assistant Secretary. The Secretary shall have such other duties and powers as may be designated from time to time by the Board of Directors or the Chief Executive Officer. In the absence of the Secretary, any Assistant Secretary may perform his or her duties and responsibilities.

Any Assistant Secretary shall have such powers and perform such duties as the Board of Directors or the Chief Executive Officer may from time to time designate.

SECTION 14. Other Powers and Duties.

Subject to these By-laws and to such limitations as the Board of Directors may from time to time prescribe, the officers of the Corporation shall each have such powers and duties as generally pertain to their respective offices, as well as such powers and duties as from time to time may be conferred by the Board of Directors or the Chief Executive Officer.

SECTION 15. Representation of Shares of Other Corporations. The Chairperson of the Board, the President, any Vice President, the Treasurer, the Secretary or Assistant Secretary of the Corporation, or any other person authorized by the Board of Directors or the President or a Vice President, is authorized to vote, represent and exercise on behalf of the Corporation all rights incident to any and all securities of any other entity or entities standing in the name of the Corporation. The authority granted herein may be exercised either by such person directly or by any other person authorized to do so by proxy or power of attorney duly executed by such person having the authority.

SECTION 16. Bonded Officers. The Board of Directors may require any officer to give the Corporation a bond in such sum and with such surety or sureties as shall be satisfactory to the Board of Directors upon such terms and conditions as the Board of Directors may specify, including without limitation a bond for the faithful performance of his or her duties and for the restoration to the Corporation of all property in his or her possession or under his or her control belonging to the Corporation.

Article IV

Capital Stock

SECTION 1. Certificates of Stock.

Each stockholder shall be entitled to a certificate of the capital stock of the Corporation in such form as may from time to time be prescribed by the Board of Directors. Such certificate shall be signed by any two authorized officers of the Corporation. The Corporation seal and the signatures by the Corporation's officers, the transfer agent or the registrar may be facsimiles. In case any officer, transfer agent or registrar who has signed or whose facsimile signature has been placed on such certificate shall have ceased to be such officer, transfer agent or registrar before such certificate is issued, it may be issued by the Corporation with the same effect as if he or she were such officer, transfer agent or registrar at the time of its issue. Every certificate for shares of stock which are subject to any restriction on transfer and every certificate issued when the Corporation is authorized to issue more than one class or series of stock shall contain such legend with respect thereto as is required by law. Notwithstanding anything to the contrary provided in these Bylaws, the Board of Directors may provide by resolution or resolutions that some or all of any or all classes or series of its stock shall be uncertificated shares (except that the foregoing shall not apply to shares represented by a certificate until such certificate is surrendered to the Corporation), and by the approval and adoption of these Bylaws the Board of Directors has determined that all classes or series of the Corporation's stock may be uncertificated, whether upon original issuance, re-issuance, or subsequent transfer.

SECTION 2. Transfers.

Subject to any restrictions on transfer and unless otherwise provided by the Board of Directors, shares of stock that are represented by a certificate may be transferred on the books of the Corporation by the surrender to the Corporation or its transfer agent of the certificate theretofore properly endorsed or accompanied by a written assignment or power of attorney properly executed, with transfer stamps (if necessary) affixed, and with such proof of the authenticity of signature as the Corporation or its transfer agent may reasonably require. Shares of stock that are not represented by a certificate may be transferred on the books of the Corporation by submitting to the Corporation or its transfer agent such evidence of transfer and following such other procedures as the Corporation or its transfer agent may require.

SECTION 3. Stock Transfer Agreements. The Corporation shall have power to enter into and perform any agreement with any number of stockholders of any one or more classes of stock of the Corporation to restrict the transfer of shares of stock of the corporation of any one or more classes owned by such stockholders in any manner not prohibited by the DGCL.

SECTION 4. Record Holders.

Except as may otherwise be required by law, by the Certificate or by these By-laws, the Corporation shall be entitled to treat the record holder of stock as shown on its books as the owner of such stock for all purposes, including the payment of dividends and the right to vote with respect thereto, regardless of any transfer, pledge or other disposition of such stock, until

the shares have been transferred on the books of the Corporation in accordance with the requirements of these By-laws.

SECTION 5. Record Date.

In order that the Corporation may determine the stockholders entitled to notice of or to vote at any meeting of stockholders or any adjournment thereof or entitled to receive payment of any dividend or other distribution or allotment of any rights, or entitled to exercise any rights in respect of any change, conversion or exchange of stock or for the purpose of any other lawful action, the Board of Directors may fix a record date, which record date shall not precede the date upon which the resolution fixing the record date is adopted by the Board of Directors, and which record date: (a) in the case of determination of stockholders entitled to vote at any meeting of stockholders, shall, unless otherwise required by law, not be more than sixty (60) nor less than ten (10) days before the date of such meeting and (b) in the case of any other action, shall not be more than sixty (60) days prior to such other action. If no record date is fixed: (i) the record date for determining stockholders entitled to notice of or to vote at a meeting of stockholders shall be at the close of business on the day next preceding the day on which notice is given, or, if notice is waived, at the close of business on the day next preceding the day on which the meeting is held and (ii) the record date for determining stockholders for any other purpose shall be at the close of business on the day on which the Board of Directors adopts the resolution relating thereto.

SECTION 6. Replacement of Certificates.

In case of the alleged loss, destruction or mutilation of a certificate of stock of the Corporation, a duplicate certificate may be issued in place thereof, upon such terms as the Board of Directors may prescribe.

Article V

Indemnification

SECTION 1. Definitions.

For purposes of this Article V:

(a) “Director” means any person who serves or has served the Corporation as a director on the Board of Directors of the Corporation.

(b) “Officer” means any person who serves or has served the Corporation as an officer appointed by the Board of Directors of the Corporation;

(c) “Non-Officer Employee” means any person who serves or has served as an employee of the Corporation, but who is not or was not a Director or Officer;

(d) “Proceeding” means any threatened, pending or completed action, suit, arbitration, alternate dispute resolution mechanism, inquiry, investigation, administrative hearing or other proceeding, whether civil, criminal, administrative, arbitral or investigative;

(e) “Expenses” means all reasonable attorneys’ fees, retainers, court costs, transcript costs, fees of expert witnesses, private investigators and professional advisors (including, without limitation, accountants and investment bankers), travel expenses, duplicating costs, printing and binding costs, costs of preparation of demonstrative evidence and other courtroom presentation aids and devices, costs incurred in connection with document review, organization, imaging and computerization, telephone charges, postage, delivery service fees, and all other disbursements, costs or expenses of the type customarily incurred in connection with prosecuting, defending, preparing to prosecute or defend, investigating, being or preparing to be a witness in, settling or otherwise participating in, a Proceeding;

(f) “Corporate Status” describes the status of a person who (i) in the case of a Director, is or was a director of the Corporation and is or was acting in such capacity, (ii) in the case of an Officer, is or was an officer, employee, trustee or agent of the Corporation or is or was a director, officer, employee or agent of any other corporation, partnership, joint venture, trust, employee benefit plan or other enterprise which such Officer is or was serving at the request of the Corporation, and (iii) in the case of a Non-Officer Employee, is or was an employee of the Corporation or is or was a director, officer, employee or agent of any other corporation, partnership, joint venture, trust, employee benefit plan or other enterprise which such Non-Officer Employee is or was serving at the request of the Corporation. For purposes of subsection (ii) of this Section 1(f), an officer or director of the Corporation who is serving as a director, partner, trustee, officer, employee or agent of a Subsidiary shall be deemed to be serving at the request of the Corporation;

(g) “Disinterested Director” means, with respect to each Proceeding in respect of which indemnification is sought hereunder, a Director of the Corporation who is not and was not a party to such Proceeding; and

(h) “Subsidiary” shall mean any corporation, partnership, limited liability company, joint venture, trust or other entity of which the Corporation owns (either directly or through or together with another Subsidiary of the Corporation) either (i) a general partner, managing member or other similar interest or (ii) (A) 50% or more of the voting power of the voting capital equity interests of such corporation, partnership, limited liability company, joint venture or other entity, or (B) 50% or more of the outstanding voting capital stock or other

voting equity interests of such corporation, partnership, limited liability company, joint venture or other entity.

SECTION 2. Indemnification of Directors and Officers.

(a) Subject to the operation of Section 4 of this Article V, each Director and Officer shall be indemnified and held harmless by the Corporation to the fullest extent authorized by the DGCL, as the same exists or may hereafter be amended (but, in the case of any such amendment, only to the extent that such amendment permits the Corporation to provide broader indemnification rights than such law permitted the Corporation to provide prior to such amendment), and to the extent authorized in this Section 2.

(1) Actions, Suits and Proceedings Other than By or In the Right of the Corporation. Each Director and Officer shall be indemnified and held harmless by the Corporation against any and all Expenses and Liabilities that are incurred or paid by such Director or Officer or on such Director's or Officer's behalf in connection with any Proceeding or any claim, issue or matter therein (other than an action by or in the right of the Corporation), which such Director or Officer is, or is threatened to be made, a party to or participant in by reason of such Director's or Officer's Corporate Status, if such Director or Officer acted in good faith and in a manner such Director or Officer reasonably believed to be in or not opposed to the best interests of the Corporation and, with respect to any criminal proceeding, had no reasonable cause to believe his or her conduct was unlawful.

(2) Actions, Suits and Proceedings By or In the Right of the Corporation. Each Director and Officer shall be indemnified and held harmless by the Corporation against any and all Expenses that are incurred by such Director or Officer or on such Director's or Officer's behalf in connection with any Proceeding or any claim, issue or matter therein by or in the right of the Corporation, which such Director or Officer is, or is threatened to be made, a party to or participant in by reason of such Director's or Officer's Corporate Status, if such Director or Officer acted in good faith and in a manner such Director or Officer reasonably believed to be in or not opposed to the best interests of the Corporation; provided, however, that no indemnification shall be made under this Section 2(a)(2) in respect of any claim, issue or matter as to which such Director or Officer shall have been finally adjudged by a court of competent jurisdiction to be liable to the Corporation, unless, and only to the extent that, the Court of Chancery of the State of Delaware or another court in which such Proceeding was brought shall determine upon application that, despite adjudication of liability, but in view of all the circumstances of the case, such Director or Officer is fairly and reasonably entitled to indemnification for such Expenses that such court deems proper.

(3) Survival of Rights. The rights of indemnification provided by this Section 2 shall continue as to a Director or Officer after he or she has ceased to be a Director or Officer and shall inure to the benefit of his or her heirs, executors, administrators and personal representatives.

(4) Actions by Directors or Officers. Notwithstanding the foregoing, the Corporation shall indemnify any Director or Officer seeking indemnification in connection with a Proceeding initiated by such Director or Officer only if such Proceeding (including any

parts of such Proceeding not initiated by such Director or Officer) was authorized in advance by the Board of Directors, unless such Proceeding was brought to enforce such Officer's or Director's rights to indemnification or, in the case of Directors, advancement of Expenses under these By-laws in accordance with the provisions set forth herein.

SECTION 3. Indemnification of Non-Officer Employees.

Subject to the operation of Section 4 of this Article V, each Non-Officer Employee may, in the discretion of the Board of Directors, be indemnified by the Corporation to the fullest extent authorized by the DGCL, as the same exists or may hereafter be amended, against any or all Expenses and Liabilities that are incurred by such Non-Officer Employee or on such Non-Officer Employee's behalf in connection with any threatened, pending or completed Proceeding, or any claim, issue or matter therein, which such Non-Officer Employee is, or is threatened to be made, a party to or participant in by reason of such Non-Officer Employee's Corporate Status, if such Non-Officer Employee acted in good faith and in a manner such Non-Officer Employee reasonably believed to be in or not opposed to the best interests of the Corporation and, with respect to any criminal proceeding, had no reasonable cause to believe his or her conduct was unlawful. The rights of indemnification provided by this Section 3 shall exist as to a Non-Officer Employee after he or she has ceased to be a Non-Officer Employee and shall inure to the benefit of his or her heirs, personal representatives, executors and administrators. Notwithstanding the foregoing, the Corporation may indemnify any Non-Officer Employee seeking indemnification in connection with a Proceeding initiated by such Non-Officer Employee only if such Proceeding was authorized in advance by the Board of Directors.

SECTION 4. Determination.

Unless ordered by a court, no indemnification shall be provided pursuant to this Article V to a Director, to an Officer or to a Non-Officer Employee unless a determination shall have been made that such person acted in good faith and in a manner such person reasonably believed to be in or not opposed to the best interests of the Corporation and, with respect to any criminal Proceeding, such person had no reasonable cause to believe his or her conduct was unlawful. Such determination shall be made by (a) a majority vote of the Disinterested Directors, even though less than a quorum of the Board of Directors, (b) a committee comprised of Disinterested Directors, such committee having been designated by a majority vote of the Disinterested Directors (even though less than a quorum), (c) if there are no such Disinterested Directors, or if a majority of Disinterested Directors so directs, by independent legal counsel in a written opinion, or (d) by the stockholders of the Corporation.

SECTION 5. Advancement of Expenses to Directors Prior to Final Disposition.

(a) The Corporation shall advance all Expenses incurred by or on behalf of any Director in connection with any Proceeding in which such Director is involved by reason of such Director's Corporate Status within thirty (30) days after the receipt by the Corporation of a written statement from such Director requesting such advance or advances from time to time, whether prior to or after final disposition of such Proceeding. Such statement or statements shall reasonably evidence the Expenses incurred by such Director and shall be preceded or accompanied by an undertaking by or on behalf of such Director to repay any Expenses so

advanced if it shall ultimately be determined that such Director is not entitled to be indemnified against such Expenses. Notwithstanding the foregoing, the Corporation shall advance all Expenses incurred by or on behalf of any Director seeking advancement of expenses hereunder in connection with a Proceeding initiated by such Director only if such Proceeding (including any parts of such Proceeding not initiated by such Director) was (i) authorized by the Board of Directors, or (ii) brought to enforce such Director's rights to indemnification or advancement of Expenses under these Bylaws.

(b) If a claim for advancement of Expenses hereunder by a Director is not paid in full by the Corporation within thirty (30) days after receipt by the Corporation of documentation of Expenses and the required undertaking, such Director may at any time thereafter bring suit against the Corporation to recover the unpaid amount of the claim and, if successful in whole or in part, such Director shall also be entitled to be paid the expenses of prosecuting such claim. The failure of the Corporation (including its Board of Directors or any committee thereof, independent legal counsel, or stockholders) to make a determination concerning the permissibility of such advancement of Expenses under this Article V shall not be a defense to an action brought by a Director for recovery of the unpaid amount of an advancement claim and shall not create a presumption that such advancement is not permissible. The burden of proving that a Director is not entitled to an advancement of expenses shall be on the Corporation.

(c) In any suit brought by the Corporation to recover an advancement of expenses pursuant to the terms of an undertaking, the Corporation shall be entitled to recover such expenses upon a final adjudication that the Director has not met any applicable standard for indemnification set forth in the DGCL.

SECTION 6. Advancement of Expenses to Officers and Non-Officer Employees Prior to Final Disposition.

(a) The Corporation may, at the discretion of the Board of Directors, advance any or all Expenses incurred by or on behalf of any Officer or any Non-Officer Employee in connection with any Proceeding in which such person is involved by reason of his or her Corporate Status as an Officer or Non-Officer Employee upon the receipt by the Corporation of a statement or statements from such Officer or Non-Officer Employee requesting such advance or advances from time to time, whether prior to or after final disposition of such Proceeding. Such statement or statements shall reasonably evidence the Expenses incurred by such Officer or Non-Officer Employee and shall be preceded or accompanied by an undertaking by or on behalf of such person to repay any Expenses so advanced if it shall ultimately be determined that such Officer or Non-Officer Employee is not entitled to be indemnified against such Expenses.

(b) In any suit brought by the Corporation to recover an advancement of expenses pursuant to the terms of an undertaking, the Corporation shall be entitled to recover

such expenses upon a final adjudication that the Officer or Non-Officer Employee has not met any applicable standard for indemnification set forth in the DGCL.

SECTION 7. Contractual Nature of Rights.

(a) The provisions of this Article V shall be deemed to be a contract between the Corporation and each Director and Officer entitled to the benefits hereof at any time while this Article V is in effect, in consideration of such person's past or current and any future performance of services for the Corporation. Neither amendment, repeal or modification of any provision of this Article V nor the adoption of any provision of the Certificate inconsistent with this Article V shall eliminate or reduce any right conferred by this Article V in respect of any act or omission occurring, or any cause of action or claim that accrues or arises or any state of facts existing, at the time of or before such amendment, repeal, modification or adoption of an inconsistent provision (even in the case of a proceeding based on such a state of facts that is commenced after such time), and all rights to indemnification and advancement of Expenses granted herein or arising out of any act or omission shall vest at the time of the act or omission in question, regardless of when or if any proceeding with respect to such act or omission is commenced. The rights to indemnification and to advancement of expenses provided by, or granted pursuant to, this Article V shall continue notwithstanding that the person has ceased to be a director or officer of the Corporation and shall inure to the benefit of the estate, heirs, executors, administrators, legatees and distributees of such person.

(b) If a claim for indemnification hereunder by a Director or Officer is not paid in full by the Corporation within sixty (60) days after receipt by the Corporation of a written claim for indemnification, such Director or Officer may at any time thereafter bring suit against the Corporation to recover the unpaid amount of the claim, and if successful in whole or in part, such Director or Officer shall also be entitled to be paid the expenses of prosecuting such claim. The failure of the Corporation (including its Board of Directors or any committee thereof, independent legal counsel, or stockholders) to make a determination concerning the permissibility of such indemnification under this Article V shall not be a defense to an action brought by a Director or Officer for recovery of the unpaid amount of an indemnification claim and shall not create a presumption that such indemnification is not permissible. The burden of proving that a Director or Officer is not entitled to indemnification shall be on the Corporation.

(c) In any suit brought by a Director or Officer to enforce a right to indemnification hereunder, it shall be a defense that such Director or Officer has not met any applicable standard for indemnification set forth in the DGCL.

SECTION 8. Non-Exclusivity of Rights.

The rights to indemnification and to advancement of Expenses set forth in this Article V shall not be exclusive of any other right which any Director, Officer, or Non-Officer Employee may have or hereafter acquire under any statute, provision of the Certificate or these By-laws, agreement, vote of stockholders or Disinterested Directors or otherwise.

SECTION 9. Insurance.

The Corporation may maintain insurance, at its expense, to protect itself and any Director, Officer or Non-Officer Employee against any liability of any character asserted against or incurred by the Corporation or any such Director, Officer or Non-Officer Employee, or arising out of any such person's Corporate Status, whether or not the Corporation would have the power to indemnify such person against such liability under the DGCL or the provisions of this Article V.

SECTION 10. Other Indemnification. The Corporation's obligation, if any, to indemnify or provide advancement of Expenses to any person under this Article V as a result of such person serving, at the request of the Corporation, as a director, partner, trustee, officer, employee or agent of another corporation, partnership, joint venture, trust, employee benefit plan or other enterprise shall be reduced by any amount such person may collect as indemnification or advancement of Expenses from such other corporation, partnership, joint venture, trust, employee benefit plan or enterprise (the "Primary Indemnitor"). Any indemnification or advancement of Expenses under this Article V owed by the Corporation as a result of a person serving, at the request of the Corporation, as a director, partner, trustee, officer, employee or agent of another corporation, partnership, joint venture, trust, employee benefit plan or other enterprise shall only be in excess of, and shall be secondary to, the indemnification or advancement of Expenses available from the applicable Primary Indemnitor(s) and any applicable insurance policies.

SECTION 11. Savings Clause. If this Article V or any portion hereof shall be invalidated on any ground by any court of competent jurisdiction, then the Corporation shall nevertheless indemnify each Indemnitee as to any expenses (including, without limitation, attorneys' fees), liabilities, losses, judgments, fines (including, without limitation, excise taxes and penalties arising under the Employee Retirement Income Security Act of 1974, as amended) and amounts paid in settlement in connection with any action, suit, proceeding or investigation, whether civil, criminal or administrative, including, without limitation, an action by or in the right of the Corporation, to the fullest extent permitted by any applicable portion of this Article V that shall not have been invalidated and to the fullest extent permitted by applicable law.

Article VI

Miscellaneous Provisions

SECTION 1. Fiscal Year.

The fiscal year of the Corporation shall be determined by the Board of Directors.

SECTION 2. Seal.

The Board of Directors shall have power to adopt and alter the seal of the Corporation.

SECTION 3. Execution of Instruments.

All deeds, leases, transfers, contracts, bonds, notes and other obligations to be entered into by the Corporation in the ordinary course of its business without director action may be executed on behalf of the Corporation by the Chairperson of the Board, if one is elected, the President or the Treasurer or any other officer, employee or agent of the Corporation as the Board of Directors or the executive committee of the Board of Directors may authorize.

SECTION 4. Voting of Securities.

Unless the Board of Directors otherwise provides, the Chairperson of the Board, if one is elected, the President or the Treasurer may waive notice of and act on behalf of this Corporation, or appoint another person or persons to act as proxy or attorney in fact for this Corporation with or without discretionary power and/or power of substitution, at any meeting of stockholders or shareholders of any other corporation or organization, any of whose securities are held by this Corporation.

SECTION 5. Resident Agent.

The Board of Directors may appoint a resident agent upon whom legal process may be served in any action or proceeding against the Corporation.

SECTION 6. Corporate Records.

The original or attested copies of the Certificate, By-laws and records of all meetings of the incorporators, stockholders and the Board of Directors and the stock transfer books, which shall contain the names of all stockholders, their record addresses and the amount of stock held by each, may be kept outside the State of Delaware and shall be kept at the principal office of the Corporation, at the an office of its counsel, at an office of its transfer agent or at such other place or places as may be designated from time to time by the Board of Directors.

SECTION 7. Certificate.

All references in these By-laws to the Certificate shall be deemed to refer to the Certificate, as amended and/or restated and in effect from time to time.

SECTION 8. Exclusive Jurisdiction of Delaware Courts or the United States Federal District Courts.

Unless the Corporation consents in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware shall be the sole and exclusive forum for (i) any derivative action or proceeding brought on behalf of the Corporation, (ii) any action asserting a claim of, or a claim based on, a breach of a fiduciary duty owed by any current or former director, officer or other employee or stockholder of the Corporation to the Corporation or the Corporation's stockholders, (iii) any action asserting a claim arising pursuant to any provision of the DGCL or the Certificate or these Bylaws (including the interpretation, validity or enforceability thereof) or as to which the DGCL confers jurisdiction on the Court of Chancery of the State of Delaware, or (iv) any action asserting a claim governed by the internal affairs

doctrine; provided, however, that this sentence will not apply to any causes of action arising under the Securities Act of 1933, as amended, or the Exchange Act, or to any claim for which the federal courts have exclusive jurisdiction. Unless the Corporation consents in writing to the selection of an alternative forum, the federal district courts of the United States of America shall be the sole and exclusive forum for resolving any complaint asserting a cause of action arising under the Securities Act of 1933, as amended, the Exchange Act, or the respective rules and regulations promulgated thereunder. To the

fullest extent permitted by law, any person or entity purchasing or otherwise acquiring any interest in shares of capital stock of the Corporation shall be deemed to have notice of and consented to the provisions of this Section 8.

SECTION 9. Amendment of By-laws.

(a) Amendment by Directors. Except as provided otherwise by law, these By-laws may be amended or repealed by the Board of Directors by the affirmative vote of a majority of the directors then in office.

(b) Amendment by Stockholders. Except as otherwise provided herein, the By-laws of the Corporation may be amended or repealed at any Annual Meeting, or special meeting of stockholders called for such purpose, by the affirmative vote of at least not less than two-thirds (2/3) of the outstanding shares of capital stock entitled to vote on such amendment or repeal, voting together as a single class; provided, however, that if the Board of Directors recommends that stockholders approve such amendment or repeal at such meeting of stockholders, such amendment or repeal shall only require the affirmative vote of the majority of outstanding shares of capital stock entitled to vote on such amendment or repeal, voting together as a single class.

SECTION 10. Notices. If mailed, notice to stockholders shall be deemed given when deposited in the mail, postage prepaid, directed to the stockholder at such stockholder's address as it appears on the records of the Corporation. Without limiting the manner by which notice otherwise may be given to stockholders, any notice to stockholders may be given by electronic transmission in the manner provided in Section 232 of the DGCL.

SECTION 11. Waivers. A written waiver of any notice, signed by a stockholder or director, or waiver by electronic transmission by such person, whether given before or after the time of the event for which notice is to be given, shall be deemed equivalent to the notice required to be given to such person. Neither the business to be transacted at, nor the purpose of, any meeting need be specified in such a waiver.

Adopted February 23, 2023 and effective as of February 23, 2023.

EXECUTIVE EMPLOYMENT AGREEMENT

This Employment Agreement (“Agreement”) is made as of the 1st day of June, 2021 (the “Commencement Date”), between Plug Power Inc., a Delaware corporation (the “Company”), and David Mindnich (the “Executive”).

WHEREAS, the Executive and the Company have determined to enter into an agreement related to the employment of Executive by the Company;

NOW, THEREFORE, in consideration of the mutual covenants and agreements herein contained and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties agree as follows:

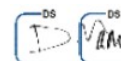
1. Employment. The term of this Agreement shall extend from the Commencement Date until the first anniversary of the Commencement Date; provided, however, that the term of this Agreement shall automatically be extended for one additional year on the anniversary of the Commencement Date and on each anniversary thereafter unless, not less than ninety (90) days prior to each such date, either party shall have given notice to the other that it does not wish to extend this Agreement; provided, further, that if a Change in Control occurs during the original or extended term of this Agreement, the term of this Agreement shall continue in effect for a period of not less than twelve (12) months beyond the month in which the Change in Control occurred. The term of this Agreement shall also terminate upon any Date of Termination (as defined in Section 4) and may be referred to herein as the “Term.”

2. Position and Duties. During the Term, the Executive shall serve as the Executive Vice President, Global Manufacturing, and shall have responsibilities and duties consistent with his position and such other responsibilities and duties as may from time to time be prescribed by the Chairman of the Board of Directors of the Company (the “Board”), the Chief Executive Officer of the Company (the “CEO”) or other authorized executives, provided that such responsibilities and duties are consistent with the Executive’s position or other positions that he may hold from time to time. The Executive shall devote his full working time and efforts to the business and affairs of the Company. Notwithstanding the foregoing, the Executive may serve on other boards of directors with the approval of the Board, or engage in religious, charitable or other community activities as long as such services and activities are disclosed to the Board and do not materially interfere with the Executive’s performance of his duties to the Company as provided in this Agreement.

3. Policies. Except as provided herein, the Executive shall be covered by and agrees to comply with all of the Company’s policies and procedures, including but not limited to the Company’s Employee Handbook, on the same terms as are applicable to other executives of the Company.

4. Compensation and Related Matters.

(a) Base Salary. The Executive’s initial annual base salary shall be \$300,000.00. The Executive’s base salary shall be re-determined annually by the Compensation Committee of the Board. The base salary in effect at any given time is referred to herein as “Base



Salary.” The Base Salary shall be payable in substantially equal installments based upon the payroll cycle of the Company and will be subject to applicable withholdings and deductions.

(b) Incentive Compensation. The Executive shall be eligible to receive cash incentive compensation as determined by Compensation Committee of the Board from time to time.

(c) Expenses. The Executive shall be entitled to receive prompt reimbursement for all reasonable expenses incurred by him in performing services hereunder during the Term, in accordance with the policies and procedures then in effect and established by the Company for its senior executive officers.

(d) Other Benefits. During the Term, the Executive shall be entitled to continue to participate in or receive benefits under all of the Company’s Employee Benefit Plans in accordance with the terms of such plans in effect on the date hereof, or under plans or arrangements that provide the Executive with benefits at least substantially equivalent to those provided under such Employee Benefit Plans. As used herein, the term “Employee Benefit Plans” includes, without limitation, each retirement plan; stock option plan; life insurance plan; medical insurance plan; disability plan; and health and accident plan or arrangement established and maintained by the Company on the date hereof for employees of the same status within the hierarchy of the Company. During the Term, the Executive shall be entitled to participate in or receive benefits under any employee benefit plan or arrangement which may, in the future, be made available by the Company to its executives and key management employees, subject to and on a basis consistent with the terms, conditions and overall administration of such plan or arrangement. Any payments or benefits payable to the Executive under a plan or arrangement referred to in this Section 3(d) in respect of any calendar year during which the Executive is employed by the Company for less than the whole of such year shall, unless otherwise provided in the applicable plan or arrangement, be prorated in accordance with the number of days in such calendar year during which he is so employed. Should any such payments or benefits accrue on a fiscal (rather than calendar) year, then the proration in the preceding sentence shall be on the basis of a fiscal year rather than calendar year.

(e) Vacations. The Executive shall be entitled to 160 hours of paid vacation in each calendar year, which shall be accrued monthly during the calendar year and shall be subject to the Company’s vacation policy. The Executive shall also be entitled to all paid holidays given by the Company to its executives.

5. Termination. The Executive’s employment hereunder may be terminated without any breach of this Agreement under the following circumstances:

(a) Death. The Executive’s employment hereunder shall automatically terminate upon his death.

(b) Disability. The Company may terminate the Executive’s employment if he is disabled and unable to perform the essential functions of the Executive’s then existing position or positions under this Agreement with or without reasonable accommodation for a period of 180 days (which need not be consecutive) in any 12-month period. If any question shall arise as to

whether during any period the Executive is disabled so as to be unable to perform the essential functions of the Executive's then existing position or positions with or without reasonable accommodation, the Executive may, and at the request of the Company shall, submit to the Company a certification in reasonable detail by a physician selected by the Company to whom the Executive or the Executive's guardian has no reasonable objection as to whether the Executive is so disabled or how long such disability is expected to continue, and such certification shall for the purposes of this Agreement be conclusive of the issue. The Executive shall cooperate with any reasonable request of the physician in connection with such certification. If such question shall arise and the Executive shall fail to submit such certification, the Company's determination of such issue shall be binding on the Executive. Nothing in this Section 4(b) shall be construed to waive the Executive's rights, if any, under existing law including, without limitation, the Family and Medical Leave Act of 1993, 29 U.S.C. §2601 *et seq.* and the Americans with Disabilities Act, 42 U.S.C. §12101 *et seq.*

(c) Termination by the Company for Cause. At any time during the Term, the Company may terminate the Executive's employment hereunder for Cause. For purposes of this Agreement, "Cause" shall mean: (i) conduct by the Executive constituting a material act of misconduct in connection with the performance of the Executive's duties, including, without limitation, misappropriation of funds or property of the Company or any of its subsidiaries or affiliates other than the occasional, customary and de minimis use of Company property for personal purposes; (ii) the commission by the Executive of (A) any felony; or (B) a misdemeanor involving moral turpitude, deceit, dishonesty or fraud; (iii) any conduct by the Executive that would reasonably be expected to result in material injury or reputational harm to the Company or any of its subsidiaries and affiliates if the Executive were retained in the Executive's position; (iv) continued non-performance by the Executive of the Executive's responsibilities hereunder (other than by reason of the Executive's physical or mental illness, incapacity or disability) which has continued for more than thirty (30) days following written notice of such non-performance from the Board; (v) a breach by the Executive of the Employee Patent, Confidentiality, and Non-Solicitation/Non-Compete Agreement between the Executive and the Company (the "Confidentiality Agreement"); (vi) a material violation by the Executive of any of the Company's written employment policies; (vii) failure to cooperate with a bona fide internal investigation or an investigation by regulatory or law enforcement authorities, after being instructed by the Company to cooperate, or the willful destruction or failure to preserve documents or other materials known to be relevant to such investigation or the inducement of others to fail to cooperate or to produce documents or other materials in connection with such investigation; or (viii) the Executive's failure to honor his fiduciary duties to the Company.

(d) Termination Without Cause. At any time during the Term, the Company may terminate the Executive's employment hereunder without Cause. Any termination by the Company of the Executive's employment under this Agreement which does not constitute a termination for Cause under Section 5(c) or result from the death or disability of the Executive under Section 5(a) or (b) shall be deemed a termination without Cause.

(e) Termination by the Executive. At any time during the Term, the Executive may terminate his employment hereunder for any reason, including but not limited to Good Reason. If the Executive provides notice to the Company under Section 1 that he elects to discontinue the extensions, such action shall be deemed a voluntary termination by the Executive

and one without Good Reason. For purposes of this Agreement, "Good Reason" shall mean that the Executive has complied with the "Good Reason Process" (hereinafter defined) following the occurrence of any of the following events after a Change in Control: (i) a material diminution in the Executive's responsibilities, authority or duties; (ii) a material diminution in the Executive's Base Salary; (iii) a material change in the geographic location at which the Executive provides services to the Company; or (iv) the material breach of this Agreement by the Company. "Good Reason Process" shall mean that (i) the Executive reasonably determines in good faith that a "Good Reason" condition has occurred; (ii) the Executive notifies the Company in writing of the occurrence of the Good Reason condition within sixty (60) days of the occurrence of such condition; (iii) the Executive cooperates in good faith with the Company's efforts, for a period not less than 30 days following such notice (the "Cure Period"), to remedy the condition; (iv) notwithstanding such efforts, the Good Reason condition continues to exist; and (v) the Executive terminates his employment within sixty (60) days after the end of the Cure Period. If the Company cures the Good Reason condition during the Cure Period, Good Reason shall be deemed not to have occurred.

(f) Notice of Termination. Except for termination as specified in Section 5(a), any termination of the Executive's employment by the Company or any such termination by the Executive shall be communicated by written Notice of Termination to the other party hereto. For purposes of this Agreement, a "Notice of Termination" shall mean a notice which shall indicate the specific termination provision in this Agreement relied upon.

(g) Date of Termination. "Date of Termination" shall mean: (i) if the Executive's employment is terminated by his death, the date of his death; (ii) if the Executive's employment is terminated by the Company for Cause under Section 5(c), the date on which Notice of Termination is given; (iii) if the Executive's employment is terminated by the Company under Section 5(b) or 5(d), thirty (30) days after the date on which a Notice of Termination is given; (iv) if the Executive's employment is terminated by the Executive under Section 5(e) without Good Reason, thirty (30) days after the date on which a Notice of Termination is given, and (v) if the Executive's employment is terminated by the Executive under Section 5(e) with Good Reason, the date on which a Notice of Termination is given after the end of the Cure Period. Notwithstanding the foregoing, in the event that the Executive gives a Notice of Termination to the Company, the Company may unilaterally accelerate the Date of Termination and such acceleration shall not constitute a termination by the Company for purposes of this Agreement.

6. Compensation Upon Termination.

(a) Termination Generally. If the Executive's employment with the Company is terminated for any reason during the Term, the Company shall pay or provide to the Executive (or to his authorized representative or estate) any earned but unpaid base salary, incentive compensation determined by the Board to be earned but not yet paid, unpaid expense reimbursements, accrued but unused vacation and any vested benefits the Executive may have under the Company's Employee Benefit Plans through the Date of Termination (the "Accrued Benefit"). The Executive shall not be entitled to receive any other termination payments or benefits from the Company except as specifically provided in Section 6(b) or Section 7.

(b) Termination by the Company Without Cause. Except as provided in Section 7, if the Executive's employment is terminated by the Company without Cause as provided in Section 5(d), then the Company shall, through the Date of Termination, pay the Executive his Accrued Benefit. Except as provided in Section 7, if (i) the Executive's employment is terminated by the Company without Cause as provided in Section 5(d), (ii) the Executive signs a general release of claims in a form and manner satisfactory to the Company (the "Release") within 21 days of the receipt of the Release and does not revoke such Release during the seven-day revocation period (if applicable), and (iii) the Executive complies with the Confidentiality Agreement, then

A. The Company shall pay the Executive an amount equal to the sum of one (1) times the Executive's Base Salary. Such amount shall be paid out either in a lump sum or in installments, per the discretion of the Company, and commencing on the first payroll date after the Date of Termination or expiration of the seven-day revocation period for the Release, whichever is later.

B. As of the Date of Termination, all vested stock options held by the Executive shall be exercisable for twelve (12) months following the Date of Termination; and any unvested stock options, restricted stock or other stock-based equity award will be immediately forfeited upon the Date of Termination.

C. Executive's coverage under the Company's group health insurance will extend through the end of the month in which the Date of Termination occurs. Executive may elect COBRA continuation coverage for the group health plans. Notification of conditions and premiums costs to continue health insurance will be provided to Executive following termination. Executive will be responsible for payment of premiums for health insurance coverage secured after the end of the month in which the Date of Termination occurs. In consideration of the loss of various benefits provided by the Company, the Company shall choose to either provide a lump sum payment to Executive equal to twelve (12) times the Company's share of the monthly health insurance premium for the health insurance plan in force on the Date of Termination, less applicable withholdings and deductions OR provide a monthly subsidy for a period of twelve (12) months and equivalent to the Company's share of the monthly health insurance premium for the health insurance plan in force on the Date of Termination to offset the Executive's COBRA cost.

D. The Company shall have no obligation to make any further payments (salary, bonus or otherwise) or provide any further benefits to Executive except as otherwise provided under the applicable terms of this Agreement or the Company's Employee Benefit Plans.

7. Change in Control Payment. The provisions of this Section 7 set forth certain terms regarding the Executive's rights and obligations upon the occurrence of a Change in Control of the Company. These provisions are intended to assure and encourage in advance the Executive's continued attention and dedication to his assigned duties and his objectivity during the pendency and after the occurrence of any such event. These provisions shall apply in lieu of, and expressly supersede, the provisions of Section 6(b) regarding severance pay and benefits upon a termination

of employment, if such termination of employment occurs within 12 months after the occurrence of the first event constituting a Change in Control, provided that such first event occurs during the Term. These provisions shall terminate and be of no further force or effect beginning 12 months after the occurrence of a Change in Control.

(a) Change in Control. If (i) within twelve (12) months after a Change in Control, the Executive's employment is terminated by the Company without Cause as provided in Section 5(d) or the Executive terminates his employment for Good Reason as provided in Section 5(e), (ii) the Executive signs the Release within twenty-one (21) days of the receipt of the Release and does not revoke the Release during the seven-day revocation period (if applicable), and (iii) the Executive complies with the Confidentiality Agreement, then

A. The Company shall pay to the Executive an amount equal to (i) one-hundred percent (100%) the Executive's average annual base salary over the three (3) fiscal years immediately prior to the Termination Date (or the Executive's annual base salary in effect immediately prior to the Change in Control, if higher) and (ii) one-hundred percent (100%) of the Executive's average annual bonus over the three (3) fiscal years immediately prior to the Change in Control (or the Executive's annual bonus for the last fiscal year immediately prior to the Change in Control, if higher). Such amounts shall be paid out either in a lump sum or in installments, per the discretion of the Company, and commencing on the first payroll date after the Date of Termination or expiration of the seven-day revocation period for the Release, whichever is later, subject to Section 7(b) regarding additional limitations and Section 8 regarding IRC Section 409A.

B. Notwithstanding anything to the contrary in any applicable option agreement or stock-based award agreement, on the Termination Date the Executive shall vest in such portion of his stock options and other stock-based awards as he would have vested in if he had remained employed by the Company for twelve (12) months following the Termination Date.

C. Executive's coverage under the Company's group health insurance will extend through the end of the month in which the Date of Termination occurs. Executive may elect COBRA continuation coverage for the group health plans. Notification of conditions and premiums costs to continue health insurance will be provided to Executive following termination. Executive will be responsible for payment of premiums for health insurance coverage secured after the end of the month in which the Date of Termination occurs. In consideration of the loss of various benefits provided by the Company, the Company shall choose to either provide a lump sum payment to Executive equal to twelve (12) times the Company's share of the monthly health insurance premium for the health insurance plan in force on the Date of Termination, less applicable withholdings and deductions OR provide a monthly subsidy for a period of twelve (12) months and equivalent to the Company's share of the monthly health insurance premium for the health insurance plan in force on the Date of Termination to offset the Executive's COBRA cost.

D. The Company shall pay to the Executive all reasonable legal and arbitration fees and expenses incurred by the Executive in obtaining or enforcing any right or benefit provided by this Agreement, except in cases involving frivolous or bad faith litigation.

E. The Company shall have no obligation to make any further payments (salary, bonus or otherwise) or provide any further benefits to Executive except as otherwise provided under the applicable terms of this Agreement or the Company's Employee Benefit Plans.

(b) Additional Limitation.

(i) Anything in this Agreement to the contrary notwithstanding, in the event that any compensation, payment or distribution by the Company to or for the benefit of the Executive, whether paid or payable or distributed or distributable pursuant to the terms of this Agreement or otherwise (the "Severance Payments"), would be subject to the excise tax imposed by Section 4999 of the Code, the following provisions shall apply:

A. If the Severance Payments, reduced by the sum of (1) the Excise Tax and (2) the total of the Federal, state, and local income and employment taxes payable by the Executive on the amount of the Severance Payments which are in excess of the Threshold Amount, are greater than or equal to the Threshold Amount, the Executive shall be entitled to the full benefits payable under this Agreement.

B. If the Threshold Amount is less than (x) the Severance Payments, but greater than (y) the Severance Payments reduced by the sum of (1) the Excise Tax and (2) the total of the federal, state, and local income and employment taxes on the amount of the Severance Payments which are in excess of the Threshold Amount, then the benefits payable under this Agreement shall be reduced (but not below zero) to the extent necessary so that the maximum Severance Payments shall not exceed the Threshold Amount.

(ii) For the purposes of this Section 7(b), "Threshold Amount" shall mean three times the Executive's "base amount" within the meaning of Section 280G(b)(3) of the Code and the regulations promulgated thereunder less one dollar (\$1.00); and "Excise Tax" shall mean the excise tax imposed by Section 4999 of the Code, and any interest or penalties incurred by the Executive with respect to such excise tax.

(iii) The determination as to which of the alternative provisions of Section 7(b)(i) shall apply to the Executive shall be made by a nationally recognized accounting firm selected by the Company (the "Accounting Firm"), which shall provide detailed supporting calculations both to the Company and the Executive within fifteen (15) business days of the Date of Termination, if applicable, or at such earlier time as is reasonably requested by the Company or the Executive. For purposes of determining which of the alternative provisions of Section 7(b)(i) shall apply, the Executive shall be

deemed to pay federal income taxes at the highest marginal rate of federal income taxation applicable to individuals for the calendar year in which the determination is to be made, and state and local income taxes at the highest marginal rates of individual taxation in the state and locality of the Executive's residence on the Date of Termination, net of the maximum reduction in federal income taxes which could be obtained from deduction of such state and local taxes. Any determination by the Accounting Firm shall be binding upon the Company and the Executive.

(c) Definitions. For purposes of this Section 7, the following terms shall have the following meanings:

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

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

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

(iii) Upon (A) the consummation of any consolidation or merger of the Company where the shareholders of the Company, immediately prior to the consolidation or merger, did not, immediately after the consolidation or merger, beneficially own (as such term is defined in Rule 13d-3 of the Exchange Act), directly or indirectly, shares representing in the aggregate more than 50% of the voting shares of the corporation issuing cash or securities in the consolidation or merger (or of its ultimate parent corporation, if

any), (B) the consummation of any sale, lease, exchange or other transfer (in one transaction or a series of transactions contemplated or arranged by any party as a single plan) of all or substantially all of the assets of the Company or (C) the completion of a liquidation or dissolution that has been approved by the stockholders of the Company; or

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

Notwithstanding the foregoing, a “Change in Control” shall not be deemed to have occurred for purposes of the foregoing clause (i) solely as the result of an acquisition of securities by the Company which, by reducing the number of shares of Stock outstanding, increases the proportionate number of shares of Stock beneficially owned by any person to 25% or more of the shares of Stock then outstanding; provided, however, that if any such person shall at any time following such acquisition of securities by the Company become the beneficial owner of any additional shares of Stock (other than pursuant to a stock split, stock dividend, or similar transaction) and such person immediately thereafter is the beneficial owner of 25% or more of the shares of Stock then outstanding, then a “Change in Control” shall be deemed to have occurred for purposes of the foregoing clause (i), as applicable.

8. Section 409A.

(a) Anything in this Agreement to the contrary notwithstanding, if at the time of the Executive’s “separation from service” within the meaning of Section 409A of the Code, the Company determines that the Executive is a “specified employee” within the meaning of Section 409A(a)(2)(B)(i) of the Code, and to the extent any payment or benefit that the Executive becomes entitled to under this Agreement would be considered deferred compensation subject to the 20 percent additional tax imposed pursuant to Section 409A(a) of the Code as a result of the application of Section 409A(a)(2)(B)(i) of the Code, then no such payment shall be payable and no such benefit shall be provided prior to the date that is the earlier of (A) six months and one day after the Executive’s separation from service, or (B) the Executive’s death.

(b) All in-kind benefits provided and expenses eligible for reimbursement under this Agreement shall be provided by the Company or incurred by the Executive during the time periods set forth in this Agreement. All reimbursements shall be paid as soon as administratively practicable, but in no event shall any reimbursement be paid after the last day of the taxable year following the taxable year in which the expense was incurred. The amount of in-kind benefits provided or reimbursable expenses incurred in one taxable year shall not affect the in-kind benefits to be provided or the expenses eligible for reimbursement in any other taxable year. Such right to reimbursement or in-kind benefits is not subject to liquidation or exchange for another benefit.

(c) To the extent that any payment or benefit described in this Agreement constitutes “non-qualified deferred compensation” under Section 409A of the Code, and to the

extent that such payment or benefit is payable upon the Executive's termination of employment, then such payments or benefits shall be payable only upon the Executive's "separation from service." The determination of whether and when a separation from service has occurred shall be made in accordance with the presumptions set forth in Treasury Regulation Section 1.409A-1(h).

(d) The parties intend that this Agreement will be administered in accordance with Section 409A of the Code. To the extent that any provision of this Agreement is ambiguous as to its compliance with Section 409A of the Code, the provision shall be read in such a manner so that all payments hereunder comply with Section 409A of the Code. The parties agree that this Agreement may be amended, as reasonably requested by either party, and as may be necessary to fully comply with Section 409A of the Code and all related rules and regulations in order to preserve the payments and benefits provided hereunder without additional cost to either party.

(e) The Company makes no representation or warranty and shall have no liability to the Executive or any other person if any provisions of this Agreement are determined to constitute deferred compensation subject to Section 409A of the Code but do not satisfy an exemption from, or the conditions of, such Section.

9. Covenants.

(a) Confidentiality Agreement. The Executive acknowledges and agrees that the Employee Patent, Confidentiality, and Non-Solicitation/Non-Compete Agreement shall continue in effect as if set forth herein.

(b) Litigation and Regulatory Cooperation. During and after the Term, the Executive shall cooperate fully with the Company and all of its subsidiaries and affiliates (including its and their outside counsel) in connection with the contemplation, prosecution and defense of all phases of existing, past and future claims or actions which relate to events or occurrences that transpired while the Executive was employed by the Company. The Executive's full cooperation in connection with such claims or actions shall include, but not be limited to, being available to meet with counsel to prepare for discovery or trial and to act as a witness on behalf of the Company at mutually convenient times. During and after the Term, the Executive also shall cooperate fully with the Company in connection with any investigation or review of any federal, state or local regulatory authority as any such investigation or review relates to events or occurrences that transpired while the Executive was employed by the Company. The Company shall reimburse the Executive for any pre-approved reasonable business travel expenses that are incurred in connection with the Executive's performance of obligations pursuant to this Section 8(a) after receipt of appropriate documentation consistent with the Company's business expense reimbursement policy.

(c) Disparagement. During and after the Term, the Executive agrees not to make any disparaging statements concerning the Company or any of its subsidiaries, affiliates or current or former officers, directors, shareholders, employees or agents ("Company Parties"). The Executive further agrees not to take any actions or conduct himself in any way that would reasonably be expected to affect adversely the reputation or good will of the Company or any of the Company Parties. The Executive further agrees that he shall not voluntarily provide information to or otherwise cooperate with any individual or entity that is contemplating or

pursuing litigation against the Company or any of the Company Parties or that is undertaking any investigation or review of the Company's or any of the Company Parties' activities or practices. Nothing in this Agreement prevents Executive from filing a charge with the Equal Employment Opportunity Commission ("EEOC") or participating in any investigation or proceeding conducted by the EEOC nor does it limit Executive's ability to file a complaint with the Securities and Exchange Commission ("SEC") or communicate with the SEC or otherwise participate in any investigation or proceeding that may be conducted by the SEC nor does it prevent Executive from disclosing information about unlawful acts in the workplace, including, but not limited to, sexual harassment. These nondisparagement obligations shall not in any way affect the Executive's obligation to testify truthfully in any legal proceeding.

(d) Return of Property. As soon as possible in connection with any termination of the Executive's employment under this Agreement or when otherwise requested by the Company, the Executive shall return to the Company all Company property, including, without limitation, computer equipment, software, keys and access cards, credit cards, files and any documents (including computerized data and any copies made of computer data or software) containing information concerning the Company, its business or its business relationships (in the latter two cases, actual or prospective). The Executive shall also commit to deleting and finally purging any duplicates of files or documents that may contain Company information from any computer or other device that remains his property after any Date of Termination. If requested by the Company, Executive will provide a written acknowledgement and certification that all such Company property has been returned and electronic data permanently deleted and that Executive has not shared or provided such information to any third parties. Executive acknowledges and agrees that failure to surrender such property will cause irreparable damage to the Company.

(e) Injunction. The Executive agrees that it would be difficult to measure any damages caused to the Company which might result from any breach by the Executive of his obligations under this Agreement, and that in any event money damages would be an inadequate remedy for any such breach. Accordingly, subject to Section 10 of this Agreement, the Executive agrees that if the Executive breaches, or proposes to breach, any provision of this Agreement, the Company shall be entitled, in addition to all other remedies that it may have, to an injunction or other appropriate equitable relief to restrain any such breach without showing or proving any actual damage to the Company.

10. Settlement and Arbitration of Disputes. Any controversy or claim arising out of or relating to this Agreement or the breach thereof shall be settled exclusively by arbitration in accordance with the laws of the State of New York by three arbitrators, one of whom shall be appointed by the Company, one by the Executive and the third by the first two arbitrators. If the first two arbitrators cannot agree on the appointment of a third arbitrator, then the third arbitrator shall be appointed by the American Arbitration Association. Such arbitration shall be conducted in the City of Albany in accordance with the Employment Arbitration Rules of the American Arbitration Association, except with respect to the selection of arbitrators which shall be as provided in this Section 10. Judgment upon the award rendered by the arbitrators may be entered in any court having jurisdiction thereof. This Section 10 shall be specifically enforceable. Notwithstanding the foregoing, this Section 10 shall not preclude either party from pursuing a court action for the sole purpose of obtaining a temporary restraining order or a preliminary

injunction in circumstances in which such relief is appropriate; provided that any other relief shall be pursued through an arbitration proceeding pursuant to this Section 10.

11. Consent to Jurisdiction. To the extent that any court action is permitted consistent with or to enforce Section 10 of this Agreement, the parties hereby consent to the jurisdiction of the Supreme Courts of New York State and the United States District Court for the Northern District of New York. Accordingly, with respect to any such court action, the Executive (a) submits to the personal jurisdiction of such courts; (b) consents to service of process; and (c) waives any other requirement (whether imposed by statute, rule of court, or otherwise) with respect to personal jurisdiction or service of process.

12. Integration. This Agreement constitutes the entire agreement and understanding between the parties with respect to the subject matter hereof and supersedes all prior agreements between the parties concerning such subject matter, except the Confidentiality Agreement, which remains in full force and effect.

13. Withholding. All payments made by the Company to the Executive under this Agreement shall be net of any tax or other amounts required to be withheld by the Company under applicable law.

14. Successor to the Executive. This Agreement shall inure to the benefit of and be enforceable by the Executive's personal representatives, executors, administrators, heirs, distributees, devisees and legatees. In the event of the Executive's death after his termination of employment but prior to the completion by the Company of all payments due him under this Agreement, the Company shall continue such payments to the Executive's beneficiary designated in writing to the Company prior to his death (or to his estate, if the Executive fails to make such designation).

15. Conditions of Offer. The Company's offer of employment is conditioned on Executive's submission of satisfactory proof of legal authorization to work in the United States and, if requested, Executive's completion of a standard background check to the satisfaction of the Company. This offer is also conditioned on Executive signing and returning the Company's Employee Patent, Confidentiality, and Non-Solicitation/Non-Compete Agreement.

16. Enforceability. If any portion or provision of this Agreement (including, without limitation, any portion or provision of any section of this Agreement) shall to any extent be declared illegal or unenforceable by a court of competent jurisdiction, then the remainder of this Agreement, or the application of such portion or provision in circumstances other than those as to which it is so declared illegal or unenforceable, shall not be affected thereby, and each portion and provision of this Agreement shall be valid and enforceable to the fullest extent permitted by law.

17. Waiver. No waiver of any provision hereof shall be effective unless made in writing and signed by the waiving party. The failure of any party to require the performance of any term or obligation of this Agreement, or the waiver by any party of any breach of this Agreement, shall not prevent any subsequent enforcement of such term or obligation or be deemed a waiver of any subsequent breach.

18. Notices. Any notices, requests, demands and other communications provided for by this Agreement shall be sufficient if in writing and delivered in person or sent by a nationally recognized overnight courier service or by registered or certified mail, postage prepaid, return receipt requested, to the Executive at the last address the Executive has filed in writing with the Company or, in the case of the Company, at its main offices, attention of the Board.

19. Effect on Other Plans. Nothing in this Agreement shall be construed to limit the rights of the Executive under the Company's benefit plans, programs or policies except (a) as otherwise provided herein, and (b) that the Executive shall have no rights to any severance or similar benefits under any severance pay plan, policy or practice.

20. Amendment. This Agreement may be amended or modified only by a written instrument signed by the Executive and by a duly authorized representative of the Company.

21. Governing Law. This is a California contract and shall be construed under and be governed in all respects by the laws of the State of California, without giving effect to the conflict of laws principles of such State. With respect to any disputes concerning federal law, such disputes shall be determined in accordance with the law as it would be interpreted and applied by the United States Court of Appeals for the Ninth Circuit.

22. Counterparts. This Agreement may be executed in any number of counterparts, each of which when so executed and delivered shall be taken to be an original; but such counterparts shall together constitute one and the same document.

23. Successor to Company. The Company shall require any successor (whether direct or indirect, by purchase, merger, consolidation or otherwise) to all or substantially all of the business or assets of the Company expressly to assume and agree to perform this Agreement to the same extent that the Company would be required to perform it if no succession had taken place. Failure of the Company to obtain an assumption of this Agreement at or prior to the effectiveness of any succession shall be a breach of this Agreement and shall constitute Good Reason if the Executive elects to terminate employment.

24. Gender Neutral. Wherever used herein, a pronoun in the masculine gender shall be considered as including the feminine gender unless the context clearly indicates otherwise.

25. Survival. The provisions of this Agreement shall survive the termination of this Agreement and/or the termination of the Executive's employment to the extent necessary to effectuate the terms contained herein.

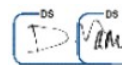
IN WITNESS WHEREOF, the parties hereto have executed this Agreement effective on the date and year first above written.

PLUG POWER INC.

By: /s/ Andrew Marsh 6/4/2021
Name: Andrew Marsh
Title: Chief Executive Officer

David Mindnich

By: /s/ David Mindnich 6/4/2021
Name: David Mindnich
Title: EVP, Global Manufacturing



Plug Power Inc. Subsidiaries

Below is a list of Plug Power Inc.'s wholly owned subsidiaries. The names of certain subsidiaries have been omitted because, considered in the aggregate as a single subsidiary, they would not constitute, as of December 31, 2022, a "significant subsidiary" as that term is defined in Rule 1-02(w) of Regulation S-X.

Plug Project Holding Co. LLC (incorporated in Delaware)
Yellowtail Energy, LLC (incorporated in Delaware)
Gateway Hydrogen, LLC (incorporated in Delaware)
Youngwind, LLC (incorporated in Delaware)
Peachtree Renewables, LLC (incorporated in Delaware)
Plug Power Limestone LLC (incorporated in Delaware)
Heartland Solar 1, LLC (Delaware)
LA JV LLC (incorporated in Delaware)
United Hydrogen Group, Inc. (incorporated in Delaware)
Alloy Custom Products, LLC (incorporated in Indiana)
Westmor Cryogenics, LLC (incorporated in Texas)
Applied Cryo Technologies, Inc. (incorporated in Texas)
Joule Processing, LLC (incorporated in Texas)
Frames Holding BV (incorporated in Netherlands)
Plug Power France SAS (incorporated in France)
Plug Power Europe SAS (incorporated in Texas)
Plug Power España S.L. (incorporated in Spain)
Plug Power Germany GmbH (incorporated in Germany)

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in Registration Statement Nos. 333-265488 on Form S-3 and Registration Statement Nos. 333-267508 and 333-258797 on Form S-8 of our reports dated March 1, 2023, relating to the financial statements of Plug Power Inc. and its subsidiaries and the effectiveness of Plug Power Inc.'s internal control over financial reporting appearing in this Annual Report on Form 10-K for the year ended December 31, 2022.

/s/ Deloitte & Touche LLP

Rochester, NY

March 1, 2023

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the registration statements (No. 333-265488) on Form S-3 and (Nos. 333-258797 and 333-267508) on Form S-8 of our report dated March 1, 2022, with respect to the consolidated financial statements of Plug Power Inc..

/s/ KPMG LLP

Albany, New York
March 1, 2023

I, Andrew Marsh, certify that:

1. I have reviewed this annual report on Form 10-K of Plug Power Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 1, 2023

by: /s/ ANDREW MARSH
Andrew Marsh
Chief Executive Officer

I, Paul B. Middleton certify that:

1. I have reviewed this annual report on Form 10-K of Plug Power Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 1, 2023

by: /s/ PAUL B. MIDDLETON
Paul B. Middleton
Chief Financial Officer

**CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the Annual Report of Plug Power Inc. (the “Company”) on Form 10-K for the period ended December 31, 2022 as filed with the Securities and Exchange Commission (the “SEC”) on the date hereof (the “Report”), I, Andrew Marsh, Chief Executive Officer of the Company, certify, solely pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002 (“§ 906”), that to my knowledge:

- (1) The Report fully complies with the requirements of Section 13(a) or 15(d), as applicable, of the Securities Exchange Act of 1934, as amended; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

This certification is being furnished and not filed, and shall not be incorporated into any documents for any other purpose, under the Securities Exchange Act of 1934, as amended, or the Securities Act of 1933, as amended. A signed original of this written statement required by § 906 has been provided to the Company and will be retained by the Company and furnished to the SEC or its staff upon request.

/s/ ANDREW MARSH

Andrew Marsh

Chief Executive Officer

March 1, 2023

**CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the Annual Report of Plug Power Inc. (the “Company”) on Form 10-K for the period ended December 31, 2022 as filed with the Securities and Exchange Commission (the “SEC”) on the date hereof (the “Report”), I, Paul B. Middleton, Chief Financial Officer of the Company, certify, solely pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002 (“§ 906”), that to my knowledge:

- (1) The Report fully complies with the requirements of Section 13(a) or 15(d), as applicable, of the Securities Exchange Act of 1934, as amended; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

This certification is being furnished and not filed, and shall not be incorporated into any documents for any other purpose, under the Securities Exchange Act of 1934, as amended, or the Securities Act of 1933, as amended. A signed original of this written statement required by § 906 has been provided to the Company and will be retained by the Company and furnished to the SEC or its staff upon request.

/s/ PAUL B. MIDDLETON

Paul B. Middleton

Chief Financial Officer

March 1, 2023
