

2024 ANNUAL REPORT TO STOCKHOLDERS

UNITED STATES SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, D.C. 20549

FORM 10-K

(Mark One) ⊠	ANNUAL REPORT PURSUAN	Γ TO SECTION 13 OR 15(d)	OF THE SECURITIES EX	CHANGE ACT OF 1934			
		` '					
	For the fiscal year ended December 31, 2024 TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT						
_		or the transition period from	` '				
		Commission file number					
	Plug Power Inc. (Exact Name of Registrant as Specified in Its Charter)						
	Delaware			672377			
	(State or Other Jurisdiction)	(I.R.S. Identification Number)				
Sacurities regis	of Incorporation or Organization tered pursuant to Section 12(b) of the		Nu	mber)			
Securities regis	icred pursuant to Section 12(b) of the	. Act.					
	le of Each Class	Trading Syn	abol(s)	Name of Each Exchange on Which Registered			
Common Sto	ck, par value \$.01 per share	PLUG		The NASDAQ Capital Market			
	(Addre	BOULEVARD, SLINGERL ss of Principal Executive Offic (518) 782-770 egistrant's telephone number, i	es, including Zip Code)				
	Securities	registered pursuant to Section	n 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 Sec	curities Act. Yes ⊠ No □			
Indicate	e by check mark if the registrant is no	ot required to file reports pursua	ant to Section 13 or Section 15	(d) of the Act. Yes □ No ⊠			
Act of 1934 du	e by check mark whether the registrar ring the preceding 12 months (or for hirements for the past 90 days. Yes ⊠	such shorter period that the reg		or 15(d) of the Securities Exchange th reports), and (2) has been subject to			
Rule 405 of Re	e by check mark whether the registral gulation S-T (§232.405 of this chapters). Yes ⊠ No □						
company, or en	e by check mark whether the registran nerging growth company. See the de wth company" in Rule 12b-2 of the E	finitions of "large accelerated f					
Large acc	elerated filer Accelerated Filer [☐ Non-accelerated filer ☐	Smaller reporting company	☐ Emerging growth company ☐			
	If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.						
Indicate by check mark whether the registrant 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 \boxtimes No \square							
	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	Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes □ No ☒						
\$1,288,916,762		he common stock on The NAS		es of the registrant was approximately 28, 2024, the last business day of the			
As of February 26, 2025, 925,178,088 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 2025 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, or if received, may not be available to us on favorable terms;
- the risk that we may not be able to expand our business or manage our future growth effectively;
- our ability to maintain an effective system of internal control over financial reporting;
- 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 not be able to obtain from our hydrogen suppliers a sufficient supply of hydrogen at competitive prices or the risk that we may not be able to produce hydrogen internally at competitive prices;
- our ability to achieve the forecasted revenue and costs on the sale of our products;
- the risk that we may not be able to convert all of our estimated future revenue into revenue and cash flows;
- the risk that purchase orders may not ship, be commissioned or installed and/or converted to revenue, in whole or in part;
- the risk that some or all of the recorded goodwill, intangible assets and property, plant, and equipment could be subject to impairment;
- the anticipated benefits and actual savings and costs resulting from the implementation of cost-reduction measures that include workforce reductions and limits on discretionary spending, inventory and capital expenditures;
- the risks associated with global economic uncertainty, including inflationary pressures, fluctuating interest rates, currency fluctuations, and supply chain disruptions;
- the risk of elimination, reduction of, or changes in qualifying criteria for government subsidies and economic incentives for alternative energy products, or the nonrenewal of such subsidies and incentives;
- the risk that the Department of Energy loan may be delayed, or that we may not be able to satisfy all of the technical, legal, environmental or financial conditions acceptable to the Department of Energy to receive the loan;
- the risks, liabilities, and costs related to environmental, health, and safety matters;
- 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 said products on a profitable and large-scale commercial basis;
- 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 of dilution to our stockholders and/or impact to our stock price should we need to raise additional capital;

- the risk that negative publicity related to our business or stock could result in a negative impact on our stock value and profitability;
- our ability to leverage, attract and retain key personnel;
- the risk related to increased scrutiny and changing expectations from regulators, investors, and others regarding our environmental, social and governance practices and reporting, including those related to workplace diversity, equity and inclusion;
- the risk of increased costs associated with legal proceedings and legal compliance;
- the risk that a loss of one or more of our major customers, or the delay in payment or the failure to pay receivables by one of our major customers, could have a material adverse effect on our financial condition;
- the risk of potential losses related to any contract disputes;
- the risk of potential losses related to any product liability claims;
- the cost and timing of developing, marketing, and selling our products;
- 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 arrangements to support the sale or leasing of our products and services to customers, or our power purchase agreements with such customers;
- the risk that we may not be able to maintain a sufficient level of liquidity to achieve our business objectives or meet our obligations;
- the cost and availability of fuel and fueling infrastructures for our products;
- the risk that our convertible senior notes, if settled in cash, could have a material adverse 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 risks related to the use of flammable fuels in our 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 risks related to our operational dependency on information technology and the risk of the failure of such technology, including failure to effectively prevent, detect, and recover from security compromises or breaches, including cyber-attacks;
- the cost of complying with current and future federal, state and international governmental regulations;
- the risks associated with past and potential future acquisitions;
- the risks associated with geopolitical instability, including the conflicts in the Middle East and between Russia and Ukraine as well as 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, "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:

- We have incurred losses and anticipate continuing to incur losses;
- We will have to raise additional capital through public or private equity or debt transactions and/or complete
 one or more strategic transactions to continue our business and such capital may not be available to us or, if
 received, may not be available to us on favorable terms;
- Our ability to achieve our business objectives and to continue to meet our obligations is dependent upon our ability to maintain a sufficient level of liquidity;
- We may not be able to expand our business or manage our future growth effectively;
- If we fail to maintain effective internal control over financial reporting, we may not be able to accurately report our financial results in a timely manner or prevent fraud and may be subject to fines, penalties or judgments, which can harm our reputation or otherwise cause a decline in investor confidence;
- We may be unable to successfully execute and operate our hydrogen production projects and such projects may cost more and take longer to complete than we expect;
- The DOE funding of the loan may be delayed, and we may not be able to satisfy all of the technical, legal, environmental or financial conditions acceptable to the DOE to receive the loan;
- Delays in or not completing our product and project development goals may adversely affect our revenue and profitability;
- Our products and performance depend largely on the availability of hydrogen and recent insufficient supplies of hydrogen could negatively affect our sales and deployment of our products and services;
- Our estimated future revenue may not be indicative of actual future revenue or profitability;
- 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;
- Inflationary trends, economic uncertainty, market trends, political instability and other conditions affecting the profitability and financial stability of us and our customers could negatively impact our sales growth and results of operations;
- Volatile commodity prices and shortages may adversely affect our gross margins and financial results;
- The funding of the loan guarantee from the Department of Energy may be delayed, and we may not be able to satisfy all of the technical, legal, environmental or financial conditions acceptable to the Department of Energy to receive the loan guarantee;
- 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 future plans could be harmed if we are unable to leverage, attract or retain key personnel;
- We are subject to legal proceedings and legal compliance risks that could harm our business;
- 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;
- We face risks associated with our plans to market, distribute and service our products internationally;
- Changes in U.S. or foreign trade policies, treaties, tariffs and taxes as well as geopolitical conditions and other factors could have a material adverse effect on our business;
- 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;
- 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;

- Unfavorable developments affecting the banking and financial services industry could adversely affect our business, liquidity and financial condition, and overall results of operations;
- Certain component quality issues have resulted in adjustments to our warranty accruals and the accrual for loss contracts:
- We are dependent on information technology in our operations and the failure of such technology may
 adversely affect our business. Security breaches of our information technology systems, including cyberattacks, ransomware attacks, or use of malware or phishing or other malicious techniques by threat actors,
 have in the past, and could in the future impact our operations or lead to liability, or damage our reputation
 and financial results;
- The delays in the implementation of a new enterprise resource planning system could cause disruption to our operations;
- Our products and services face intense competition;
- 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;
- 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;
- 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 success depends on our ability to improve our financial and operational performance and execute our business strategy;
- We are subject to various federal, state, local and non-U.S. environmental and human health and safety laws and regulations that could impose significant costs and liabilities on us and impact our business practices, including climate change and environmental, social and governance ("ESG") reporting requirements;
- Our business is subject to 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 will continue to be dependent on certain third-party key suppliers for components of our products, hydrogen generation projects, and manufacturing facilities, and failure of a supplier to develop and supply components on mutually agreeable terms 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, increase our cost of production, or affect our ability to generate hydrogen, which would in turn negatively affect our sales and deployment of our products and services;
- We may be unable to establish or maintain relationships with third parties for certain aspects of continued product developments, manufacturing, distribution, sale, servicing, and supply 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;
- Our stock price and stock trading volume have been and could remain volatile, and the value of your
 investment could decline and if securities analysts do not maintain coverage of us or if they publish
 unfavorable or inaccurate research or reports about our business, our stock, or our industry, the price of our
 stock and the trading volume 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;
- Provisions in our governing documents and Delaware law may discourage or delay an acquisition of the Company by a third party that stockholders may consider favorable and may limit a stockholder's ability to bring a claim in a forum a stockholder finds favorable;
- We do not anticipate paying any dividends on our common stock;
- We are exposed to fluctuations in currency exchange rates, which could negatively affect our operating results.

Item 1. Business

Background

Plug is building an end-to-end clean hydrogen ecosystem, from production, storage, and delivery to energy generation, to help its 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 72,000 fuel cell systems for forklifts and more than 275 fueling stations. Plug intends to deliver its hydrogen solutions directly to its customers, and through joint venture partners into multiple environments, including material handling, supply chain and logistics, e-mobility, stationary power generation and industrial applications.

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

- Fuel cells: Fuel cells are electrochemical devices that combine hydrogen and oxygen to produce electricity and heat without combustion. Plug offers stationary and mobility fuel cell products to its customers in addition to serving the material handling industry. Plug's fuel cells power material handling vehicles (forklifts), replacing lead-acid batteries. Plug supports customers at multi-shift high volume manufacturing and high throughput distribution sites where Plug's fuel cell products provide a unique combination of productivity, flexibility, and environmental benefits.
- **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. PEM technology delivers high power density, carries low weight and volume and operates at relatively low temperatures which allows it to start quickly and cause less wear and tear on the system. 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**: Plug has a 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 cryogenic solutions: Plug has expertise designing and manufacturing cryogenic solutions, including liquid storage tanks, delivery trailers, vaporizers, portable equipment, and integrated control systems. The Plug hydrogen tanker is one of the largest and lightest trailers currently manufactured, with significant over-the-road payloads.
- **Hydrogen production**: In addition to its pre-existing hydrogen production plant in Tennessee, Plug began producing liquid hydrogen at its hydrogen facility in Kingsland, Georgia in January 2024. Also, Plug's hydrogen production plant in St. Gabriel, Louisiana is on schedule, as previously announced, for operations in the first quarter of 2025, now entering the final commissioning phase, and Plug continues to progress additional new hydrogen production plants throughout the United States, including in New York and Texas.

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. In addition to our milestone achievement in January 2024 at our hydrogen facility in Georgia, Plug restarted operation of its hydrogen production plant in Tennessee in February 2024 and its hydrogen production plant in Louisiana is now entering the final commissioning phase.

- Building out a clean hydrogen network of production plants. Plug is committed to building a network across
 the United States. Plug is also planning to build out a clean hydrogen network in Europe and continues to
 explore potential partners with whom to build hydrogen production plants, with ongoing efforts for a
 hydrogen production plant at multiple locations in Europe.
- Scaling production through electrolyzer and fuel cell gigafactories at our gigafactory in Rochester, New York
 and our 350,000 square-foot world-class fuel cell manufacturing facility to support the growing demand for
 fuel cells in Slingerlands, New York.
- 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. Electrolyzers are integral to Plug's clean hydrogen ecosystem.
- Expanding into the 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 through joint ventures with Acciona Generación Renovable, S.A. ("Acciona") in Spain and SK Innovation Co., Ltd, successor in interest to SK E&S Co., Ltd. ("SK Innovation") in South Korea.
- Plug's operating strategy objectives include decreasing product and service costs, while improving 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

The Company continues 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 "goto-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 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 clean 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 clean 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) production of hydrogen; and (c) 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. 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 product and service portfolio includes:

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

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; our GenSure High Power Fuel Cell Platform supports large scale stationary power and data center markets.

Progen: Progen is our fuel cell stack and engine technology currently used globally in mobility and stationary fuel cell systems. This includes Plug's membrane electrode assembly ("MEA"), a critical component of the fuel cell stack used in zero-emission fuel cell systems.

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.

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.

Electrolyzers: The design and implementation of 5MW 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.

Liquid Hydrogen: Liquid hydrogen provides an efficient fuel alternative to fossil-based energy. We produce liquid hydrogen through our electrolyzer systems and liquefaction systems. Liquid hydrogen supply will be used by customers in material handling operations, fuel cell electric vehicle fleets, and stationary power applications.

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, with the United Kingdom also taking steps in this direction, 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 our electrolyzer business.

Facilities

Currently, we manufacture and/or assemble our products at our manufacturing facilities in Latham, New York; Rochester, New York; Slingerlands, New York; Houston, Texas; and Lafayette, Indiana; and have an expanded customer service center in Dayton, Ohio. In addition, we have hydrogen production plants in Charleston, Tennessee; Kingsland, Georgia; and St. Gabriel, Louisiana. In 2022, we opened a warehouse and logistics center in Duisburg, Germany. Please see Item 2, "Properties", for additional information regarding our facilities.

Markets, Geography and Customer Concentration

The Company's products and services predominantly serve the North American, European and Asian 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.

Customer demand for clean hydrogen has grown as a low-carbon energy source for hard-to-decarbonize industries, such as heavy-duty transportation, heavy manufacturing (steel, cement, aluminum, and chemicals), stationary power generation, and aviation. Orders for the Company's products and services approximated \$890.6 million as of the year ended December 31, 2024. 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 have varied 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.

For the year ended December 31, 2024, Walmart, Inc. ("Walmart"), accounted for 16.6% of our total consolidated revenues, which included a provision for warrant charge of \$19.6 million. Additionally, 14.4% of our total consolidated revenues were associated with our second largest customer.

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 general supplier performance, labor shortages, 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 sell electrolyzers to customers in the Europe, Middle East and African (EMEA) region and to 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, 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. The construction of the 15-ton-per-day hydrogen production plant in St. Gabriel, Louisiana progressed as planned in 2024 and is on schedule, as previously announced, for operations in the first quarter of 2025 once the final commissions phase is complete. 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 was formed to manufacture and sell fuel cell powered electric light commercial vehicles ("FCE-LCVs") 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. In December 2024, HyVia entered receivership proceedings after facing challenges in the slow evolution of hydrogen mobility ecosystems in Europe. During 2024, the Company recorded losses for HyVia which resulted in the investments in non-consolidated entities and non-marketable equity securities financial statement line item of the consolidated balance sheets related to HyVia to be \$0 as of December 31, 2024. For additional information see Note 4, "Investments".

Our wholly-owned subsidiary, Plug Power España S.L. ("Plug Power Spain"), entered into a joint venture with Acciona, named AccionaPlug S.L., in the fourth quarter of 2021. The joint venture intends to develop clean hydrogen

projects in Spain and Portugal and continues to evaluate potential projects. AccionaPlug S.L. has received funding and is owned 50% by Plug Power Spain and 50% by Acciona.

Plug Power Inc. entered into a joint venture with SK Innovation named SK Plug Hyverse Co. Ltd. ("SK Plug Hyverse"), which was initially funded in the first quarter of 2022. SK Plug Hyverse seeks to accelerate the use of hydrogen as an alternative energy source in selected Asian markets. This collaboration aims to provide hydrogen fuel cell systems, fueling stations, electrolyzers and clean hydrogen to the Korean and other selected Asian markets. The partnership will leverage SK Innovation's leadership in chemicals, petroleum and energy as well as Plug's leading hydrogen platform. This joint venture is owned 49% by Plug Power Inc. and 51% by SK Innovation.

Plug Power Inc. has also invested in a hydrogen infrastructure and growth equity fund, Clean H2 Infra Fund, a special limited partnership registered in France, since the fourth quarter of 2021. The Clean H2 Infra Fund is focused on clean hydrogen infrastructure through financing projects in the production, storage and distribution of clean hydrogen. As of December 31, 2024 the Company's ownership percentage in the Clean H2 Infra Fund was approximately 5%.

In addition, we believe Plug's acquisitions over the last several years have allowed Plug to vertically integrate and uniquely position Plug in the hydrogen industry to offer end-to-end hydrogen solutions to global customers, complementing the Company's industry-leading position in the design, construction, and operation of customer-facing hydrogen fueling stations and material handling fuel cell application. 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 companies that offer other carriers of energy, such as solar, wind and batteries, integrated gas companies, and companies offering products similar to ours, such as hydrogen generation via Steam Methane Reformers. 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, footprint, rapid integration with existing equipment and processes, customer support design innovation, marketing and distribution capability, service and support and corporate reputation. For example:

- Material handling We face competition from technologies that require electrical infrastructure at
 distribution centers. These are largely lithium ion and lead-acid batteries. Our main differentiation from these
 technologies is that we offer increased productivity at our customer sites. For example, our technologies
 provide more sustained power than batteries, recharge more quickly and also do not require our customers'
 distribution centers to draw significant power from a local electrical grid.
- Stationary products In backup and intermittent power applications, such as EV charging, we face competition from diesel generators provided by large corporations around the world. With respect to charging EVs, we fulfill a niche segment that allows customers to power vehicles while not being connected to the electrical grid. In continuous power applications, we provide a new alternative to distributed energy, such as natural gas turbines.
- Hydrogen generation and storage We face competition from companies offering products similar to ours. For example, we face competition from legacy industrial gas companies that also produce hydrogen, and there are other companies that produce PEM electrolyzers, liquefiers and cryogenic transportation and storage equipment. Our products are designed to be more efficient on operating costs and we offer vertically integrated end-to-end hydrogen solutions. For example, our hydrogen liquefaction system has one of the most energy-efficient designs in the market utilizing hydrogen as the refrigerant in the main liquefaction cycle, and our hydrogen tanker is one of the largest and lightest trailers currently being manufactured, with significant over-the-road payloads.

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 46 issued patents currently active with the United States Patent and Trademark Office ("USPTO"), expiring between 2025 and 2042. At the close of 2024, we had 30 U.S. patent applications pending. Additionally, we have 18 trademarks registered with the USPTO due for renewal between 2025 and 2031, and 3 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. Additionally, new environmental laws and regulations could restrict or prohibit the uses of certain materials, chemicals, and/or components that are needed for our products and technologies. 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.

We will continue to evaluate the potential impact such laws and regulations will have on our business. In addition, existing or pending climate change legislation, regulation, or international treaties or accords could have a material effect on our business or markets that we serve, or on our results of operations, capital expenditures or financial position. 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.

At this time we do not know what additional requirements, if any, may be imposed 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, 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.

Inflation, Material Availability and Labor Shortages

Most components essential to our business are generally available from multiple sources; however, we believe there are some component suppliers and manufacturing vendors, particularly those suppliers and vendors that supply materials in very limited supply worldwide or supply commodities that have a high degree of volatility, whose loss to us or general unavailability could have a material adverse effect upon our business and financial condition. For example, although we believe the liquid hydrogen supply challenges of the past may have lessened in recent months, we may again experience similar challenges relating to the availability of hydrogen, including but not limited to suppliers utilizing force majeure provisions under existing contracts as they have in the past, which could negatively impact the amount of hydrogen we are able to provide under certain of our hydrogen supply agreements and other customer agreements. Furthermore, global commodity pricing has been volatile and has been influenced by political events and worldwide economic trends, which has impacted our sourcing strategies, resulting in adverse impacts on our business and financial condition. We have mitigated and are continuing to mitigate these risks by continuing to diversify our supply chain, including diversifying our global supply chain and implementing alternate system architectures that we expect will allow us to source from multiple fuel cell, electrolyzer stack and air supply component vendors. While we continue to invest in our supply chain to improve its resilience with a focus on automation, dual sourcing of critical components, insourcing and localized manufacturing when feasible, we are also working closely with these vendors and other key suppliers on coordinated product introduction plans, product and sales forecasting, strategic inventories, and internal and external manufacturing schedules and levels. However, ongoing changes to, and evolution of, our products designs such as simultaneous design/build efforts and new product serviceability trends, or incorrect forecasting or updates to previously forecasted volumes could present challenges to those strategies despite best efforts in leveraging supplier relationships and capabilities. With respect to production, although cost pressures from global energy prices and inflation have been less volatile than previous years, an increase in cost pressures or a rise in inflation could negatively affect our business again, which could have a pricing impact on our key raw materials. We have a regionally diverse supply chain, and in cases where we have single sourced suppliers (typically due to new technology and products or worldwide shortages due to global demand), we work to engineer alternatives in our product design or develop new supply sources while covering short- and medium-term risks with supply contracts, building up inventory, and development partnerships. However, if we are unable to reduce such inventory, that could tie up working capital.

We continue to take proactive steps through our supply chain team to limit the impact of supplier challenges generally and we continue to work closely with our suppliers and transportation vendors to ensure availability of products and implement other cost savings initiatives. In addition, we have continued discussions with suppliers with respect to the terms of our supply agreements, and the outcome of such discussions, including whether those discussions yield the desired modifications in the terms of such supply agreements, may impact the timing of when we receive shipments of certain supplies or result in other supply chain issues.

With respect to our service business, we have experienced inflationary increases in labor, parts and related overhead. This has contributed to the increase in our estimated projected costs to service fuel cell systems and related infrastructure, which resulted in an increase in the provision for loss contracts related to service. If these trends continue, we may have to record additional service loss provisions in the future. We anticipate bookings and revenue will be uneven in the near-term while we pursue sales opportunities.

Additionally, we, as well as our suppliers and vendors, have observed an increasingly competitive labor market. Tight labor markets have resulted in longer times to fill open positions for us and our suppliers and vendors. Increased employee turnover, reassessment of employee responsibilities given current business needs, changes in the availability of our workers as well as labor shortages have resulted in, and could continue to result in, increased costs which could

negatively affect our component or raw material purchasing abilities, and in turn, our financial condition, results of operations, or cash flows.

Backlog

The timing of delivery and installations of our products has a significant impact on the timing of the recognition of our product and installation revenues. Many factors can cause a lag between the time a customer signs a contract and our recognition of product revenue. These factors include the lead time for the manufacturing and construction of hydrogen related products, including fuel cells, electrolyzers, cryogenic equipment and hydrogen infrastructure. Customers may also ask us to delay an installation for reasons unrelated to the foregoing, including delays in their financing arrangements. Further, due to unexpected delays, deployments may require unanticipated expenses to expedite delivery of materials or labor to ensure the installation meets our timing objectives. These unexpected delays and expenses can be exacerbated in periods in which we deliver and install a larger number of smaller projects. In addition, if even relatively short delays occur, there may be a significant shortfall between the revenue we expect to generate in a particular period and the revenue that we are able to recognize. For our installations, revenue and cost of revenue can fluctuate significantly on a periodic basis depending on the timing of acceptance by the customer.

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 \$77.2 million, \$113.7 million, and \$99.6 million during the years ended December 31, 2024, 2023 and 2022, respectively.

Human Capital Resources

As of December 31, 2024, we had 3,224 employees, of which 172 are temporary employees, with 2,771 located in the United States and 453 located outside of the United States. In February 2024, we announced a cost-reduction initiative that included strategic workforce adjustments which was effectively completed during the fourth quarter of 2024. We continually evaluate our workforce needs to meet the Company's strategic priorities. In March 2025, we announced a cost-reduction initiative that included additional reductions in the workforce over the coming weeks. None of our employees are represented by a collective bargaining unit, and we believe that our relationship with our employees is positive.

Engagement and Inclusion

The Company is dedicated to fostering a culture of employee engagement and inclusion and is committed to hiring talented and qualified individuals from all backgrounds and perspectives to which the Company's ultimate success is linked.

We actively seek to maintain a workplace that is free from discrimination and that fosters a sense of community and belonging among the workforce. We seek 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.

We appreciate the collective differences of our employees, and we value different perspectives to solve complex problems and bring innovative solutions. We are transparent and collaborative, welcoming ideas, thoughts, and questions from everyone. We endeavor to champion inclusivity, to respect each other, and to celebrate our differences as we build an environment in which we are all proud to be a part.

Community Involvement

We recognize the importance of supporting our local communities as we continue to grow as an organization. For example, we donate to our local communities, facilitate employee donations through United Way, and have initiated a

Community Relations Program to evaluate deserving nonprofit organizations to boost our corporate giving program. Also, each Plug employee is provided sixteen (16) hours per year paid time off to volunteer with a not-for-profit organization of his or her choice.

Performance Management, Compensation and Benefits

Our performance management process incorporates annual goals for the Company, as well as departmental 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 employees base wages that are competitive and consistent with employee positions, skill levels, experience, and location. Additionally, employees may also be granted annual short-term incentive compensation and equity compensation awards with multi-year vesting for retention.

As part of our commitment to our people, Plug offers employees competitive pay and benefits, including health, vision, and dental plans, flexible spending accounts, comprehensive life insurance (including company-provided life insurance), disability coverage and a 401(k) retirement program. Additionally, employees are offered a vacation and holiday package, and paid parental leave to aid in bonding time for new parents. To encourage savings, we auto-enroll all employees in our 401(k)-retirement savings plan after 30 days of employment.

Talent and Training

Our talent strategy is a balance of attracting external talent, combined with the possibility of upward mobility that encourages career growth and opportunity to progress within Plug. We leverage both internal and external recruitment resources and incentivize our current employees through our employee referral program to refer talent they recommend as future employees of Plug.

A key component to planning for individual career growth aligned with organizational growth is learning and development. For example, our educational assistance program offers financial assistance to encourage employees to continue their education and support their continuous enhancement of their knowledge and skills. Besides job-specific safety training, we offer personal development training on many topics, including sustainability and wellness. Online participation in internally developed business-related courses called Plugology is encouraged for all employees and helps newly hired employees assimilate to the business.

Health, Safety and Wellness

We strive to create a safe working environment, promoting environmental and employee health and safety awareness, and seek to undertake appropriate actions to reduce health and safety risks and establish procedures with appropriate protection for the safety of our employees. In addition, we undertake to safeguard the health and well-being of our employees by providing them with access to health and wellness programs that are designed to promote long-term healthy and active lifestyles. For example, in 2024 we launched a Global Employee Assistance Program to help with mental health, coaching and therapy services.

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 Securities and Exchange Commission (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 https://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 X (formerly 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 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 hydrogen production facilities at locations across the United States and Europe. Our ability to successfully complete, operate these projects and obtain green certification for some of these facilities 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 our ability to meet our internal demand for electrolyzers and liquefiers required for such projects. The timing and cost to complete the construction of our hydrogen production projects are also subject to a number of factors outside of our control such as delays related to contractors, suppliers or other third parties. Such projects may take longer and cost more to complete and become operational than we expect. For example, construction at our Georgia plant took longer than we expected before becoming operational in 2024.

The viability and competitiveness of our 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. For further information on risks associated with government regulations, see "Regulatory Risks". 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 and recent insufficient supplies 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. 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 our failure to secure hydrogen supply at competitive prices. We produce liquid hydrogen at our Georgia and Tennessee facilities. There is no assurance that our hydrogen production will scale at the rate we anticipate or that we will complete additional hydrogen production plants on schedule or at all. Additionally, we are dependent upon hydrogen suppliers to provide us with hydrogen for the commercialization of our products and services. We have experienced supply chain issues relating to the availability of hydrogen, including but not limited to suppliers utilizing force majeure provisions under existing contracts, which has led to volume constraints, delay in our deployments and service margin improvements, and negatively impacted the amount of hydrogen we have been able to provide under certain of our supply and other agreements. If hydrogen suppliers elect not to participate in the material handling market, or if supply chain issues relating to the availability of hydrogen continue, insufficient supplies of hydrogen may result. If hydrogen is not readily available or if hydrogen 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 which could materially and adversely affect our sales and the deployment of our products and services.

Inflationary trends, economic uncertainty, market trends, political instability, and other conditions affecting the profitability and financial stability of us and our customers could negatively impact our sales growth and results of operations.

Adverse economic conditions and political instability in the geographic markets we serve, such as tight credit markets, inflation, limited capital spending, delay or reduction in consumer spend, and changes in government priorities, could have a material adverse effect on our business, financial condition and results of operations. For example, increases in the cost of raw materials, and the expenses associated with the distribution and transportation of these materials and products we sell, can have an adverse impact on the business, financial condition, and results of operations of us or our suppliers. 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. For example, with respect to our service business, we have experienced inflationary increases in labor, parts and related overhead. This contributed to the increase in our estimated projected costs to service fuel cell systems and related infrastructure, which resulted in an increase in the provision for loss contracts related to service during 2024. If these trends continue, we may have to record additional service loss provisions in the future. 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.

Increases in interest rates may increase our cost of borrowing and result in limitations on our ability to access credit or otherwise raise debt and equity capital. In addition, if there is a government shutdown in the United States, especially a prolonged shutdown, it could impact our ability to access the public markets and obtain necessary capital in order to properly capitalize and continue our operations, which could have a material adverse effect on our business, financial condition and results of operations. Increased 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.

With respect to our customers, the demand for our products and services is sensitive to their production activity, capital spending and demand for their products and services. In the past couple of years, 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, we have seen them reduce spending on our products and take additional precautionary measures to limit or delay expenditures and preserve capital and liquidity. In 2024, we implemented price increases across our offerings including equipment, service and hydrogen fuel, which caused customers to change or delay their purchasing decisions with us. Reductions in customer spending on our solutions, delays in customer 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.

Volatile commodity prices and shortages may adversely affect our gross margins and financial results.

Some of our products contain commodity-priced materials. Commodity prices and supply levels affect our costs. For example, nickel, platinum, titanium and iridium are key materials in our PEM fuel cells, electrolyzers, and hydrogen infrastructure. Platinum, titanium, 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 supply shortages with respect to our demand of platinum, titanium, 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. Additionally, the geopolitical events in Ukraine could have a potentially significant impact on iridium supply that may impact our ability to produce or products or raise our cost of producing such products depending on the volume of iridium needed and success of iridium reduction engineering design efforts. Our ability to pass on such increases in costs in a timely manner depends on market conditions, and the inability to pass along cost increases could result in lower gross margins.

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

Our operations require significant amounts of necessary parts and raw materials. Most components essential to our business are generally available from multiple sources; however, we believe there are some component suppliers and manufacturing vendors, particularly those suppliers and vendors that supply materials in very limited supply worldwide or supply commodities that have high degree of volatility, whose loss to us or general unavailability could have a material adverse effect upon our business and financial condition. 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, 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, in 2023, we experienced shortages in the supply of liquid hydrogen due to suppliers utilizing force majeure provisions under existing contracts. These volume constraints delayed our deployments and service margin improvements and negatively impacted the amount of hydrogen we have been able to provide under certain of our supply and other agreements. Furthermore, ongoing global economic trends have caused significant challenges for global supply chains resulting in inflationary cost pressures, component shortages, and transportation delays, which have impacted our business.

We face risks associated with our plans to market, distribute, and service our products 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 and maintain 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 and explore potential business activities across the globe, 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.

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 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 the joint venture may be unable to access needed growth capital without additional funding from us. For example, HyVia, our joint venture with Renault, entered receivership proceedings opened by judgment of the Commercial Court of Versailles in December 2024 as a direct consequence of the slow emergence of hydrogen mobility ecosystems locally, coupled with significant development costs of hydrogen innovation and an insufficient regulatory environment. Subsequently, HyVia has entered into a judicial liquidation proceeding opened by judgment of the Economic Activities Court of Versailles dated February 18, 2025 (judgment publication being still pending). 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 materiality 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.

Our products and services face intense competition.

The markets for energy products, including PEM fuel cells, electrolyzers, and hydrogen production are intensely competitive. Our 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.

We will continue to be dependent on certain third-party key suppliers for components of our products, hydrogen generation projects, and manufacturing facilities. The failure of a supplier to develop and supply components on mutually agreeable terms 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, could increase our cost of production or could affect our ability to generate hydrogen, which would in turn negatively affect our sales and deployment of our products and services.

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 on mutually agreeable terms, 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 could experience supply chain-related delays for components of our products, hydrogen generation projects, and manufacturing facilities that could impact our cost of hydrogen production or could affect our ability to generate hydrogen. 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.

B. FINANCIAL AND LIQUIDITY RISKS

Our ability to achieve our business objectives and to continue to meet our obligations is dependent upon our ability to maintain a sufficient level of liquidity.

Our ability to maintain a sufficient level of liquidity to meet our financial obligations will be dependent upon our future performance, which will be subject to general economic conditions, industry tailwinds and financial, business and other factors affecting our operations, many of which are beyond our control. In 2024, we continued to experience negative cash flows from operations and net losses. The Company incurred net losses of approximately \$2.1 billion for the year ended December 31, 2024.

To operate more efficiently and control our expenditures, in 2024 we implemented a broad range of cost saving measures, including operational consolidation, strategic workforce reductions and various other cost reduction initiatives. In addition, in March 2025, we announced additional measures to optimize our operational footprint, resource and ongoing expenses, which included additional reductions in the workforce and additional reductions in discretionary spending, inventory and capital expenditures. There can be no assurance that the anticipated cost savings, operating efficiencies or other benefits will be achieved, within the anticipated timeframes or at all, or that they will not be significantly and materially less than anticipated. Our ability to realize the anticipated cost savings is subject to many estimates and assumptions, including business, economic and competitive uncertainties and contingencies, such as our ability to maintain business relationships and successfully negotiate changes to existing agreements with respect to pricing increases, contract terms, and delivery times, among others. Many of these uncertainties and contingencies are beyond our control and if our estimates and assumptions prove to be incorrect, if we experience delays, or if other unforeseen events occur, it may impact our ability to realize the anticipated cost savings. In addition, our cost savings initiatives may subject us to litigation risks

and expenses and may have other consequences, such as attrition beyond our planned reduction in workforce or a negative effect on employee morale, productivity or ability to attract highly skilled employees.

If our cost saving measures fail to achieve some or all of the expected benefits, it may negatively impact our current forecast of cash flows and we may be required to initiate further cost savings activities or negotiate further changes to existing agreements with vendors, suppliers and service providers. Further, our cost saving measures may result in unexpected expenses or liabilities and/or write-offs. Our lack of cash flows may also constrain our business and subject us to significant risks, including being unable to make the necessary investments in our business, which can adversely impact our ability to effectively pursue our business objectives, including delays in the construction of our hydrogen plants or delays in our ability to fulfill purchase orders. Our inability to successfully execute our business objectives could have a material adverse effect on our business, financial condition and results of operations.

To the extent our cost saving measures are not sufficient to drive a substantial reduction in cash burn throughout 2025 and we are unable to repay our debt and other obligations as they become due with cash on hand or from other sources, we will need to restructure or refinance all or part of our debt, sell assets, reduce capital expenditures, borrow more cash or raise equity. Additional indebtedness or equity financing may not be available to us in the future for the refinancing or repayment of existing debt and other obligations, or if available, such additional debt or equity financing may not be available in a sufficient amount, on a timely basis, or on terms acceptable to us and within the limitations specified in our then existing debt instruments. In addition, in the event we decide to sell additional assets, we can provide no assurance as to the timing of any asset sales or the proceeds that could be realized by us from any such asset sale.

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. As of December 31, 2024, we had an accumulated deficit of \$6.6 billion. We have continued to experience negative cash flows from operations and net losses. Our net losses were approximately \$2.1 billion, \$1.4 billion and \$724.0 million for the years ended December 31, 2024, 2023 and 2022, respectively. The net cash used in operating activities was \$728.6 million, \$1.1 billion and \$828.6 million for the years ended December 31, 2024, 2023 and 2022, respectively. We expect to generate operating losses for the foreseeable future as we continue to devote significant resources to optimize our current production and manufacturing capacity, construct hydrogen plants and manage inventory to deliver our end-products and related services.

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 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.

We will have to raise additional capital through public or private equity or debt transactions and/or complete one or more strategic transactions to continue our business and such capital may not be available to us or, if received, may not be available to us on favorable terms.

As of December 31, 2024, we had net working capital of \$729.0 million, which was comprised of the net amount of current assets of \$1.5 billion and current liabilities of \$748.5 million. Included in net working capital as of December 31, 2024 were unrestricted cash and cash equivalents of \$205.7 million and current restricted cash of \$198.0 million. This compares to net working capital of \$822.2 million as of December 31, 2023, which was comprised of the net amount of current assets of \$1.8 billion and current liabilities of \$964.8 million. Included in net working capital as of December 31, 2023 were unrestricted cash and cash equivalents of \$135.0 million and current restricted cash of \$216.6 million.

Our cash requirements relate primarily to working capital needed to operate and grow our business, including funding operating expenses, managing our inventory to support both shipments of new units and servicing the installed

base, supporting equipment leased and equipment related to Power Purchase Agreements ("PPAs") for customers under long-term arrangements, funding 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, including our ability to manage inventory; 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.

To improve our financial condition and liquidity, we will have to raise additional capital. There can be no assurance that we will have access to the capital we need on favorable terms when required 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. For example, we are party to certain agreements with collateral requirements and capital or margin calls, and we cannot predict when and what amounts may be called. 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. If we cannot raise additional funds when we need them, our financial condition and business could be materially adversely affected. In addition, we have implemented a broad range of cost saving measures, including operational consolidation, strategic workforce reductions and various other cost reduction initiatives, to reduce our cash burn. In addition, in March 2025, we announced additional reductions in the workforce and additional reductions in discretionary spending, inventory and capital expenditures. Our ability to continue our operations is contingent upon our ability to successfully implement cost saving measures such as those referenced above and if we fail to do so and are unable to raise sufficient capital and/or complete one or more strategic transactions, we would be forced to modify or cease operations, liquidate assets or pursue bankruptcy proceedings.

The DOE funding of the loan may be delayed, and we may not be able to satisfy all of the technical, legal, environmental or financial conditions acceptable to the DOE to receive the loan guarantee.

On January 16, 2025, the U.S. Department of Energy ("DOE") agreed to arrange a multi-draw term loan facility to be provided by the Federal Financing Bank to a subsidiary of the Company (the "DOE loan") to finance the development, construction, and ownership of up to six green hydrogen production facilities. Our ability to receive advances under the DOE loan is subject to certain conditions, including the achievement of certain milestones, which may not be achieved at the time that we anticipate, or at all. In addition, whether and when the DOE loan will be funded is subject to a number of factors outside of our control, including legislative enactments and administrative actions. On January 20, 2025, President Trump signed the Unleashing American Energy Executive Order, which paused the release of federal funds appropriated under the Inflation Reduction Act (the "IRA") and Infrastructure Improvement and Jobs Act, including DOE loans and grants. As a result, the funding of the DOE loan may take longer than we expect and if we are not able to satisfy all of the technical, legal, environmental or financial conditions acceptable to the DOE to receive the loan, we may have to significantly reduce our spending, delay, or cancel our planned activities or substantially change our corporate structure, and we may not have sufficient resources to conduct our business as planned, which would materially and adversely affect our business, prospects, financial condition, results of operations, and cash flows.

Our estimated future revenue may not be indicative of actual future revenue or profitability.

Our estimated future revenue represents, as of a point in time, expected future revenue from work not yet completed under executed contracts. As of December 31, 2024, our estimated future revenue was approximately \$890.6 million. While we anticipate a significant amount of our estimated future revenue will be recognized as revenue over one to ten years, our estimated future revenue is subject to order cancellations and delays. We or our customers may attempt to cancel or modify orders in estimated future revenue, and we may not be able to convert all of our estimated future revenue into revenue and cash flows. In addition, if production of products are delayed resulting from parts availability

and other constraints stemming from supply chain disruptions, revenue recognition can occur over longer periods of time, and products may remain in estimated future revenue for extended periods of time. If we receive relatively large orders in any given quarter, fluctuations in quarterly levels of estimated future revenue can result because the estimated future revenue may reach levels which may not be sustained in subsequent quarters. Our estimated future revenue should not be relied on as a measure of actual future revenue or profitability.

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.

Historically, we have obtained or provided third-party financing sources to finance the sale of our products and services to our customers or our PPAs with our customers. We have experienced, and may experience in the future, difficulty in obtaining or providing adequate financing for these PPA arrangements on acceptable terms, or at all. Failure to obtain or provide such financing has impacted our product sales and results of operations, and may result in the loss of material customers, which could have a material adverse effect on our business, financial condition, and results of operations. Further, we have been required, and may be required in the future, to continue to pledge or restrict substantial amounts of our cash to support these financing arrangements. As a result, 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, 2024, approximately \$835.0 million of our cash was 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. Because we are currently focusing more on cash generation, we have paused new PPAs in the fourth quarter of 2023 and have shifted our approach to enable customers to deal directly with banks, which may temper short-term revenue growth. Although we expect PPAs to become a cash source in the near-term and for restricted cash to be released over time, our ability to realize these benefits is not guaranteed.

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

At December 31, 2024, our total outstanding indebtedness was approximately \$729.7 million, which consisted of \$173.2 million of the \$200.0 million in aggregate principal amount of 6.00% Convertible Debenture due November 11, 2026 (the "6.00% Convertible Debenture"), \$147.9 million of the \$140.4 million in aggregate principal amount of 7.00% Convertible Senior Notes due June 1, 2026 (the "7.00% Convertible Senior Notes"), \$58.3 million of the \$58.5 million in aggregate principal amount of 3.75% Convertible Senior Notes due June 1, 2025 (the "3.75% Convertible Senior Notes"), \$2.9 million of long-term debt, and \$347.4 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; and
- 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 7.00% Convertible Senior Notes or 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 7.00% 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 sheets 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.

Unfavorable developments affecting the banking and financial services industry could adversely affect our business, liquidity and financial condition, and overall results of operations.

Actual events, concerns or speculation about disruption or instability in the banking and financial services industry, such as liquidity constraints or lack of available credit, the failure of individual institutions, or the inability of individual institutions or the banking and financial service industry generally to meet their contractual obligations, could significantly impair our access to capital, delay access to deposits or other financial assets, or cause actual loss of funds subject to cash management arrangements. Similarly, these events, concerns or speculation could result in less favorable financing terms, including higher interest rates or costs and tighter financial and operating covenants, or systemic limitations on access to credit and liquidity sources, thereby making it more difficult for us to acquire financing on acceptable terms or at all. Additionally, our customers, suppliers and other business partners also could be adversely affected by these risks as described above, which in turn could result in their committing a breach or default under their contractual agreements with us, their insolvency or bankruptcy, or other adverse effects.

Any decline in available funding, lack of credit in the market, or access to cash and liquidity resources, or non-compliance of banking and financial services counterparties with their contractual commitments to us, our customers, suppliers and other partners could, among other risks, have material adverse impacts on our ability to meet our operating expenses and other financial needs, could result in breaches of our financial and/or contractual obligations, and could have material adverse impacts on our business, financial condition and results of operations.

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, 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;
- leveraging existing personnel and/or 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.

If we fail to maintain effective internal control over financial reporting, we may not be able to accurately report our financial results in a timely manner or prevent fraud and be subject to fines, penalties or judgments, which can harm our reputation or otherwise cause a decline in investor confidence.

The Sarbanes-Oxley Act requires, among other things, that we maintain effective internal control over financial reporting and disclosure controls and procedures. In particular, we must perform system and process evaluation and testing of our internal control over financial reporting to allow management to report on the effectiveness of our internal control over financial reporting, as required by Section 404 of the Sarbanes-Oxley Act. Our testing may reveal deficiencies in our internal control over financial reporting that are deemed to be material weaknesses. If we fail to maintain effective internal

control over financial reporting, we may not be able to accurately report our financial results in a timely manner or prevent fraud and be subject to fines, penalties or judgments, which can harm our reputation or otherwise cause a decline in investor confidence.

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

Delays in meeting our development goals (including delivery of electrolyzers to customers, as well as the completion of hydrogen generation projects), products experiencing technical defects, or delays in meeting cost or performance goals (including power output) will delay the profitable commercialization of our products. If such an event or events occur, 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 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 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. Orders for the Company's products and services approximated \$890.6 million as of the year ended December 31, 2024. 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. For example, we have experienced delays in product launches, and 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 designs are not finalized on schedule or 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, stationary product and 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, which could have an adverse impact on our revenue and cash flow.

Our future plans could be harmed if we are unable to leverage, 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 leverage, attract and retain qualified management and technical personnel. However, we do not know whether we will be successful in leveraging or retaining qualified personnel. Furthermore, our ability to 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 February 2024, we announced the cost-reduction initiatives that included strategic workforce adjustments as well as other expense reduction initiatives (the "2024 Restructuring Plan"). These initiatives may as yet yield unintended consequences and result in unforeseen costs well beyond the execution of the 2024 Restructuring Plan, such as the loss of institutional knowledge and expertise, attrition beyond our intended workforce adjustments, a reduction in morale among our remaining employees and adverse impact to our reputation as an employer, which may make it difficult for us to continue to retain remaining employees or hire new employees now or in the future. In addition, we may be unsuccessful in distributing the duties and obligations of departed employees among our remaining employees or to external service providers. If we are not able to successfully manage the above, there may be a material adverse impact on our business, financial condition and results of operations. In addition, we may need to undertake additional workforce reductions or restructuring activities in the future. Additionally, in March 2025, we announced cost-reduction initiatives that are anticipated to include strategic workforce adjustments, facility consolidation, and other expense reduction initiatives (the "2025 Restructuring Plan") that may not achieve the anticipated benefits and may yield unintended consequences and costs that are not fully realized until this year, such as the loss of institutional knowledge and expertise, attrition beyond our intended workforce adjustments, a reduction in morale among our remaining employees and adverse impact to our reputation as an employer, which may make it difficult for us to continue to retain remaining employees this year or hire new employees now or in the future.

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. We have from timeto-time experienced, and we may in the future experience, labor shortages and other labor-related issues. 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. The Trump Administration has issued several executive orders restricting immigration and may, either through executive authority or through new legislation, impose additional restrictions. These and any future changes in immigration laws and enforcement policies could impact the availability and cost of labor. In addition, the IRA 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. The loss or interruption of the services by any of our key employees, the inability to identify, attract or to hire qualified personnel in the future, the inability to successfully implement executive officer, key employee or other personnel transitions, or delays in hiring qualified personnel could materially and adversely affect our development and profitable commercialization plans and, therefore, our business prospects, results of operations and financial condition.

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 legal proceedings and similar disputes. 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. It is often challenging to predict the outcome of legal proceedings and similar disputes with certainty. Determining reserves for any litigation is a complex and fact-intensive process that requires significant judgment calls. There can be no assurance that our expectations will prove correct, and even if these matters are resolved in our favor or without significant cash settlements, these matters, and the time and resources necessary to litigate or resolve them, including diversion of management resources, could have a material adverse effect on our business, results of operations, financial condition and cash flows. See Note 23, "Commitments and Contingencies".

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, from time to time we have experienced other unexpected design, manufacturing or product performance issues, which has led to delayed delivery dates. 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.

We are dependent on information technology in our operations and the failure of such technology may adversely affect our business. Security breaches of our information technology systems, including cyber-attacks, ransomware attacks, or use of malware or phishing or other malicious techniques by threat actors, have in the past and could in the future impact our operations or lead to liability, or damage our reputation and financial results.

We have in the past experienced and may in the future 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. The inability to implement new systems or delays in implementing new information technology systems may also affect our ability to realize projected or expected cost savings. Additionally, the inability to implement or any delays in implementing new security measures can also affect our ability to protect against increasingly sophisticated threat actors. 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 compromises or 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. Although we believe risks from cybersecurity threats have not to date materially affected us, we have experienced and may continue to experience both successful and unsuccessful attempts to gain unauthorized access to our information technology systems on which we maintain proprietary and confidential information. For example, in or around March 2023, an unauthorized actor accessed our computer network and executed a ransomware attack, resulting in the encryption of certain of our computer systems, including systems used to store proprietary and confidential data, and exfiltration of personal information related to certain individuals. Upon detection, we took immediate steps to contain, assess and remediate the incident, including engaging outside legal counsel and external forensic investigators. We restored the affected systems and our business remained operational with no material disruption during the restoration period.

The risk of a security compromise, breach, or disruption, particularly through cyber-attacks, or cyber intrusion, including by computer hackers, insider threats, and cyber terrorists, has generally increased as cyber-attacks have become more prevalent and harder to detect and fight against and threat actors continue to become more sophisticated in their malicious techniques. Additionally, outside or unauthorized parties may attempt to access our confidential information through other means, for example by fraudulently inducing our employees to disclose confidential information through phishing emails or deceptive advertising campaigns. 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, 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 has been and could be

penetrated by outside or unauthorized parties. To date, these risks, threats or attacks have not had a material impact on our operations, business strategy or financial results, but we cannot provide assurance that they will not have a material impact in the future. Going forward, we may expend additional resources, expenses, and legal and professional fees to further enhance the security of our information technology systems and continually assess our current security measures. In addition, we may be subject to governmental investigations, enforcement actions, regulatory fines or litigation, or we may suffer from reputational damage or public statements against us as a result of unauthorized access to our information technology systems.

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

The delays in the implementation of a new enterprise resource planning ("ERP") system in 2024 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.

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. For example, we have been subject to a lawsuit against Joule Processing, LLC and Plug Power Inc., which alleges misappropriation of trade secrets under the federal Defend Trade Secrets Act of 2016, among other complaints. See Note 23, "Commitments and Contingencies". 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.

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

Generally accepted accounting principles in the United States ("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, valuation of inventories, 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.

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 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 Note 23, "Commitments and Contingencies".

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.

D. REGULATORY RISKS

The funding of the loan guarantee from the Department of Energy may be delayed, and we may not be able to satisfy all of the technical, legal, environmental or financial conditions acceptable to the Department of Energy to receive the loan guarantee.

As previously announced, the Company received a conditional commitment for an up to \$1.66 billion loan guarantee from the DOE Loan Programs Office to finance the development, construction, and ownership of up to six green hydrogen production facilities. Our ability to benefit from this loan guarantee is subject to certain technical, legal, environmental and financial conditions, including negotiation of definitive financing documents, to be satisfied before funding of the loan guarantee. Whether and when our DOE loan guarantee will be funded is subject to a number of factors outside of our control, including political administration changes, legislative enactments, administrative actions. The funding of such loan guarantee may take longer than we expect, and if we are not able to satisfy all of the technical, legal, environmental or financial conditions acceptable to the DOE to receive the loan guarantee, our business may be adversely affected.

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. The Company's ability to benefit from these subsidies and incentives is not guaranteed.

We believe that the near-term growth of alternative energy technologies will be affected by the availability and size of government and economic incentives. Many of these government incentives expire, phase out over time, may be reduced or discontinued, no longer have available funding, may be implemented differently by changes in administrative agencies, or require renewal by the applicable authority. For example, the IRA contained hundreds of billions in credits and incentives for the development of renewable energy, clean hydrogen, clean fuels, EVs and supporting infrastructure and carbon capture and sequestration, among other provisions. The IRA contains numerous tax incentives relevant to us,

including: (i) the Section 45V Credit for Production of Clean Hydrogen, which provides a production tax credit of up to \$3 per kg of qualified clean hydrogen over a 10-year credit period for the production of qualified clean hydrogen at a qualified facility in the United States; (ii) the extension and amendment of the Section 48 Investment Tax Credit ("ITC") through 2024 for fuel cells and energy storage property; (iii) and the new Section 48E Clean Electricity Investment Tax Credit, which provides a tax credit for investment in facilities that generate "zero emissions" electricity or store energy, among other provisions. In the more than two years since enactment, numerous rulemakings have imposed additional, and sometime unanticipated, strictures on IRA incentives. As discussed below, the impact of these regulatory requirements – namely the Company's ability to qualify for IRA incentives, is still not fully known. Further, it is uncertain how the new political administration will interpret and implement the IRA - in particular, for recently published regulations immediately predating the change in political administration. The Trump administration may seek to jettison recently promulgated regulations, and further, Congress may similarly seek to review certain Biden administration regulations or entirely repeal enactments and programs under the IRA or the Infrastructure Investment & Jobs Act ("IIJA"). Relatedly, the Trump administration's executive orders suspending disbursements under the IRA and/or IIJA may have materially adverse impact on the Company. The scope and impact of this executive order are unknown; however, the Company has substantially relied upon numerous tentative forms of federal incentives under the IRA and/or IIJA, including but not limited to grants for R&D activities, programmatic funding, and direct pay tax incentives. Depending upon the breath of implementation, the executive order could have a materially adverse impact on the Company.

The Company's ability to ultimately benefit from IRA tax credits and incentives is not guaranteed and is dependent upon its ability to comply with the federal government's implementation, guidance, rulemakings, and/or regulations or such incentives and programs. For example, there is no guarantee that the Company's projects will comply with the final Section 45V regulations promulgated in December 2025 – in particular, temporal matching, incrementality, and regionality limitations on the use of renewable energy credits and environmental attributes.

Similarly, the Company's fuel cell products may not qualify for any investment tax credit. The final regulations for the Section 48E Clean Electricity Investment Credit provide onerous strictures for fuel cell credit eligibility – namely compliance with the credit's "zero emissions" criteria, which could likely require a fuel cell's exclusive use of electrolytic hydrogen. There is no guarantee that the Company will be able to comply with Section 48E's proposed standards for fuel cells. The effect of the final regulations on our business is not yet known but if we are not able to comply with the final eligibility requirements and our competitors are able to do so, our business may be adversely affected. Concurrently, the preexisting Section 48 ITC was only available for fuel cells projects beginning construction before January 1, 2025. There is no guarantee that Congress will seek to extend the recently expired Section 48 ITC for fuel cells. As a result of the Section 48E final regulations, compounded with the expiration of the Sectio 48 ITC for fuel cells, no federal investment tax credit may be available for the Company's fuel cell products.

Furthermore, political administration changes, future legislative enactments, administrative actions, expiration or changes to clean energy tax credits, policies or other incentives might be more favorable to other technologies or could limit, amend, repeal, or terminate policies or other incentives that the Company currently hopes to leverage, such as the U.S. Department of Energy Loan Programs Office Loan Guarantee. For example, the Section 48 ITC for qualified fuel cell properties expired for fuel cell properties beginning construction after December 31, 2024, and as a result, there is no guarantee that Plug's fuel cell product will qualify for any federal tax credit thereafter. Any reduction, elimination, or discriminatory application of expiration of tax incentives or other government subsidies and economic incentives, or the failure to renew such tax credits, 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.

Changes in U.S. or foreign trade policies, treaties, tariffs and taxes as well as geopolitical conditions and other factors 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. Our business is subject to risks generally associated with doing business abroad, such as U.S. and foreign governmental regulation in the countries in which we operate and the countries in which our manufacturers, component suppliers, and other business partners are located. For example, geopolitical conflicts, including the ongoing war between Russia and Ukraine and related sanctions against Russia, the ongoing conflicts in the Middle East, any potential worsening or expansion of these conflicts and wars, and U.S.-China relations, could impact supply chains, trade and movement of resources and the price of commodities and affect our ability to obtain raw materials. 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. In addition, further escalation of these geopolitical conflicts, including increased trade barriers or restrictions on global trade, could result in, among other things, cyberattacks, , further increases or fluctuations in commodity and energy prices, further disruptions to the global supply chain and other adverse effects on macroeconomic conditions.

Beyond tariffs and sanctions, countries also could adopt other measures, such as taxes or controls on imports or exports of goods, which could adversely affect our operations and supply chain. For example, effective February 4, 2025, the U.S. government implemented an additional tariff on goods being imported from China and announced additional tariffs for goods imported into the U.S. from Mexico and Canada beginning in March 2025. The Company cannot predict what additional changes to trade policy will be made by the presidential administration or Congress, including whether existing tariff policies will be maintained or modified, what products may be subject to such policies or whether the entry into new bilateral or multilateral trade agreements will occur, nor can the Company predict the effects that any such changes would have on its business. However, such steps, if adopted, could increase the Company's costs and adversely impact its business and operations. In addition, changes in U.S. trade policy have resulted, and could again result, in reactions from U.S. trading partners, including adopting responsive trade policies. For example, in response to the U.S. government's additional tariff on imports from China, on February 4, 2025, the Chinese government announced that it would implement a tariff on certain goods being imported into China from the U.S. These changes in U.S. trade policy or in laws and policies governing foreign trade, and any resulting negative sentiments towards the United States as a result of such changes, could have an adverse impact on our business, financial position, results of operations, and liquidity.

We are subject to various federal, state, local and non-U.S. environmental and human health and safety laws and regulations that could impose significant costs and liabilities on us and impact our business practices, including climate change and environmental, social and governance ("ESG") reporting requirements.

Our operations are subject to 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, 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 initiatives 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. Each of these considerations is further magnified by our expansion into new regulatory jurisdictions with which we may be unfamiliar.

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.

Corporate responsibility practices and ratings are important to some investors and other stakeholders who may have differing and conflicting views as to their preferred approach to corporate responsibility matters. Expectations regarding corporate responsibility may impact our business practices and the price of our securities. Changing practices have in the past and may in the future include expanded mandatory and voluntary reporting, diligence, and disclosure on topics such as climate change, human capital, inclusion and diversity, labor, and risk oversight, and these could expand the nature, scope, and complexity of matters that we are required to control, assess and report on, which may prove difficult, expensive and time consuming. In addition, the adoption of increased government regulations and changes in investor preference related to corporate responsibility matters may result in changes to our business practices, including increasing expenses or capital expenditures. We have communicated certain initiatives regarding ESG matters and we may in the future communicate revised or additional initiatives. If our initiatives are unsuccessful or we fail to satisfy the expectations of investors, employees and other stakeholders, our reputation could be adversely affected. In recent years, corporate initiatives relating to ESG matters, including workplace diversity, equity and inclusion, have attracted negative commentary and regulatory attention in the broader business sector. Legislation, regulatory initiatives, litigation, legal opinions, federal executive orders and increased scrutiny related to corporate responsibility matters could expose the Company to additional compliance obligations, costs, and potential liabilities.

We acknowledge the significant challenge presented by climate change, and see our transformational work in developing cost-effective, renewable 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. There is no guarantee that such potential changes in laws, regulations, or policies will be favorable to our Company, our technologies, to existing or future customers, or to large-scale economic, environmental, or geopolitical conditions.

Our business is subject to 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.

There is no guarantee that local, state, federal, or international jurisdictions will adopt laws, regulations and policies that are favorable to hydrogen or fuel cell technologies. As various jurisdictions pursue climate change and decarbonization policies, hydrogen and fuel cell technologies may be subject to increased regulatory scrutiny and oversight.

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 U.S. 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 any of our effective tax rates 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, 2024, we had federal NOL carryforwards of \$3.0 billion, which begin to expire in various amounts and at various dates in 2033 through 2037 (other than federal NOL carryforwards generated after December 31, 2017, which are not subject to expiration). As of December 31, 2024, we also had federal research and development tax credit carryforwards of \$24.7 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 prechange 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.

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 are 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 and the Middle East, 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 developments, manufacturing, distribution, sale, servicing, and supply components for our products.

We will need to maintain and may need to enter into additional strategic relationships in order to complete our current 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 and anticipated products and projects, which are in development. If we are unable to identify, negotiate, enter into, and maintain satisfactory agreements with partners, including those relating to the supply, distribution, service and support of our current and anticipated products and projects, 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 and projects. 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 and maintain 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 agreements with our partners were to terminate, 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.

From time to time, we may consider opportunities to acquire or make investments in new or complementary businesses, facilities, technologies, or products, or enter into strategic initiatives, which may enhance our capabilities, expand our manufacturing network, complement our current offerings, or expand the breadth of our markets. For example, in 2021, we acquired Applied Cryo Technologies, Inc., which added significant capabilities, expertise, and technologies, including a liquid hydrogen delivery network and fleet, liquid hydrogen storage, and hydrogen mobility fueling, and Frames Holding B.V. ("Frames"), which added engineering, process, and systems integration expertise, enabling us to scale the delivery of green hydrogen solutions. In addition, in 2022, we acquired Joule Processing LLC ("Joule"), whose cryogenic process technology we adopted to efficiently liquefy hydrogen by leveraging advanced cooling processes at low temperatures.

Entering into acquisitions and investments and other strategic initiatives involve numerous risks, any of which could harm our business, including, among other things:

expenses, delays, or difficulties in integrating the acquired businesses, facilities, technologies, products, operations, and existing contracts of a target company, including the failure to realize the anticipated benefits of the combined businesses;

- expending significant cash or incurring substantial debt to finance acquisitions, which indebtedness may restrict our business or require the use of available cash to make interest and principal payments;
- 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.

Our failure to successfully complete or integrate such acquisitions could have a material adverse effect on our financial condition and results of operations. Our ability to successfully grow through strategic transactions depends upon our ability to identify, negotiate, complete, and integrate suitable target businesses, facilities, technologies, and products and to obtain any necessary financing. These efforts could be expensive and time-consuming and may disrupt our ongoing business and prevent management from focusing on our operations. We do not know if we will be able to identify acquisitions or strategic relationships we deem suitable, whether we will be able to successfully complete any such transactions on favorable terms or at all, or whether we will be able to successfully integrate any acquired business, facilities, technologies, or products into our business or retain any key personnel or suppliers. In addition, if we finance acquisitions by issuing equity securities, our existing stockholders may be diluted. As a result, if our forecasted assumptions for these acquisitions and investments are not accurate, we may not achieve the anticipated benefits of any such acquisitions, and we may incur costs in excess of what we had anticipated.

F. RISKS RELATED TO THE OWNERSHIP OF OUR COMMON STOCK

Our stock price and stock trading volume have been and could remain volatile, and the value of your investment could decline and if securities analysts do not maintain coverage of us or if they publish unfavorable or inaccurate research or reports about our business, our stock, or our industry, the price of our stock and the trading volume could decline.

The market price of our common stock has historically experienced and may continue to experience significant volatility. During 2023 and 2024, the sales price of our common stock fluctuated from a high of \$18.88 per share to a low of \$1.60 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. For example, we are subject to securities class action litigation filed after a drop in the price in our common stock in March 2021 and March 2023, 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.

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 or lowers their expectations of our Company, our stock, or our industry, 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.

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, 2024, there were approximately (i) 33,049,906 shares of common stock issuable upon conversion of the 7.00% Convertible Senior Notes at a conversion price of \$4.25 per share, (ii) 11,611,699 shares of common stock issuable upon conversion of the 3.75% Convertible Senior Notes at a conversion price of \$5.03 per share and (iii) 61,206,897 shares of common stock issuable upon conversion of the 6.00% Convertible Debenture at a conversion price of \$2.90 per share. In addition, as of December 31, 2024, we had outstanding options exercisable for an aggregate of 38,690,148 shares of common stock at a weighted average exercise price of \$8.64 per share and 82,022,634 shares of common stock issuable upon the exercise of warrants, of which 98,296,804 were vested as of December 31, 2024.

Moreover, subject to market conditions and other factors, we may issue shares of common stock, or other equity or debt securities convertible into common stock, in connection with a financing, acquisition, employee arrangement or otherwise. Any such issuance, including pursuant to any at-the-market agreements, such as the at-the-market offering program that we entered into with B. Riley Securities, Inc., or any line of equity, such as the standby equity purchase agreement that we entered with YA II PN, LTD, could result in substantial dilution to our existing stockholders.

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.

Provisions in our governing documents and Delaware law may discourage or delay an acquisition of the Company by a third party that stockholders may consider favorable and may limit a stockholder's ability to bring a claim in a forum a stockholder finds 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, 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.

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.

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

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

Item 1B. Unresolved Staff Comments

Not applicable.

Item 1C. Cybersecurity

Cybersecurity Risk Management

We face a number of cybersecurity risks in connection with our business and recognize the growing threat within the general marketplace and our industry. In the ordinary course of our business, we use, store, and process data, including data of our employees, partners, collaborators, and vendors. Cybersecurity threats and incidents include attempts to gain unauthorized access to our systems and networks, or our partners, collaborators, vendors, or other third parties with whom we do business, to disrupt operations, corrupt data or steal confidential or personal information and other cybersecurity breaches. We consider cybersecurity risk a serious threat to our business. To help the Company identify, assess, and mitigate risks to this data and our systems, we have implemented a cybersecurity risk management program that is informed by recognized industry standards and frameworks and incorporates elements of the same.

Our cybersecurity risk management program includes a number of components, including information security program assessments and continuous monitoring of critical risks from cybersecurity threats using automated tools. We periodically engage third parties to conduct risk assessments on our systems, including penetration testing and other vulnerability analyses. In 2024, Plug continued to fortify its comprehensive cybersecurity and risk controls. We maintain an insider threat program designed to identify, assess, and address potential risks from within our Company and evaluate potential risks consistent with industry practices, customer requirements, and applicable law, including privacy and other considerations. We mandated an annual cybersecurity awareness training module, enhanced our Information Technology Infrastructure Library (ITIL) based discipline of change and incident management, and overhauled our monthly patching/vulnerability management rigor. Additionally, Plug continued leveraging top-tier third party support for external and perimeter examination: completing exhaustive Penetration Testing and Vulnerability Scans (performed by OrbitalFire), establishing a robust Network Operations Center (NOC), and leveraging industry-leading endpoint monitoring and detection services (CrowdStrike). Additionally, we have implemented an employee education program whereby employees are able to attend cybersecurity awareness training during the onboarding process.

Governance

The Vice President of Information Technology ("VP of IT") oversees the daily operations of our cybersecurity risk management program and plays a central role in assessing and managing critical risks from cybersecurity threats with the support of additional IT professionals. The VP of IT role is currently held by an individual who has approximately twenty years of experience in information security management, application portfolio management, and IT governance, risk, and compliance. The VP of IT periodically reports on the cybersecurity program to the Chief Financial Officer ("CFO").

Our governance framework includes oversight by the Audit Committee of the Board of Directors. The Audit Committee meets quarterly with the CFO regarding the cybersecurity risk management program, including as relates to critical cybersecurity risks and cybersecurity initiatives and strategies. Additionally, on an annual basis, the VP of IT reports the current state of cybersecurity risk management to the full Board of Directors. The Board of Directors, as a whole and through its committees, has responsibility for the oversight of risk management.

Although we have designed our cybersecurity program and governance procedures above to mitigate cybersecurity risks, we have experienced, and we may in the future experience, threats to and breaches of our data and systems, including ransomware attacks and phishing attacks. To date, these risks, threats or attacks have not had a material impact on our operations, business strategy or financial results, but we cannot provide assurance that they will not have a material impact in the future. For more information about the cybersecurity risks we face, see the risk factor entitled "We are dependent on information technology in our operations, and the failure of such technology may adversely affect our business. Security breaches of our information technology systems, including cyber-attacks, ransomware attacks, or use of malware or phishing or other malicious techniques by threat actors, have in the past and could in the future lead to liability, impact our operations, or damage our reputation and financial results" in Item 1A, "Risk Factors".

Item 2. Properties

The following table sets forth information regarding our principal operating properties and other significant properties as of December 31, 2024, 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			
	* 4	Manufacturing, research and development, and	141 405 0	
	Latham	warehousing	141,405 sq ft	Lease
	D 1	Manufacturing, research and development, office, and	240.211 0	*
	Rochester	warehousing	240,311 sq ft	Lease
	Latham - 8BA	Corporate offices	36,989 sq ft	Lease
	Latham - 6BA	Office	19,100 sq ft	Lease
	Slingerlands	Manufacturing, warehousing, and office	350,000 sq ft	Lease
	Washington	M C / :	20.200 0	¥
	Spokane	Manufacturing	29,200 sq ft	Lease
	Massachusetts	N. C	22.000 0	T
	Concord	Manufacturing	33,000 sq ft	Lease
	Ohio	0 .	42 200 0	¥
	Dayton	Service center	43,200 sq ft	Lease
	Pennsylvania	000	4775 0	Y
	Canonsburg	Office	4,775 sq ft	Lease
	Texas Houston	M	174 412 6	Y
		Manufacturing and office	174,412 sq ft	Lease
	Magnolia	Manufacturing and office	69,550 sq ft	Lease
	Indiana LaFayette	Manufacturing and office	123,000 sq ft	Own
	Canada	Manufacturing and office	125,000 sq 1t	Own
	Montreal	Office	5,657 sq ft	Lease
	Georgia	Office	3,037 sq 1t	Lease
	Kingsland	Land and hydrogen production plant	882,556 sq ft	Own
	Tennessee	Land and nydrogen production plant	002,330 Sq II	Own
	Charleston	Utriduo con una diretion ulant	217 900 az fi	Own
Europe	Charleston	Hydrogen production plant	217,800 sq ft	Own
Europe	Netherlands			
	Alphen aan den Rijn	Office	100,299 sq ft	Lease
	Hengelo	Office	3,100 sq ft	Lease
	Germany	Office	3,100 sq 1t	
	Duisburg	Office	58,043 sq ft	Lease
	France	Office	36,043 Sq II	Lease
	Paris	Office	2,260 sq ft	Lease
	United Kingdom	Onice	2,200 sq 1t	Lease
	Nuneaton	Hydrogen production plant	3,600 sq ft	Lease
Asia	runcaton	Trydrogen production plant	3,000 sq 1t	Lease
7 131 0	India			
	Shivajinagar	Office	17,750 sq ft	Lease
	Malaysia	Office	17,750 34 11	Lease
	Kuala Lumpur	Office	1,195 sq ft	Lease
Middle East	Ruaia Dampai	Office	1,175 54 11	Louise
	United Arab Emirates			
	Dubai	Office	2,155 sq ft	Lease
South America	Duoui	onie-	2,100 54 11	Dease
South Fillionica	Brazil			
	Rio de Janeiro	Office	1,196 sq ft	Lease
			-,, , , , , , , , , , , , , , , , , ,	_ = 540.5

See Note 14, "Operating and Finance Lease Liabilities", to the consolidated financial statements for further discussion of the leases. We believe that our facilities are sufficient to accommodate our anticipated production volumes.

Item 3. Legal Proceedings

As disclosed in Note 23, "Commitments and Contingencies", of the notes to the consolidated financial statements, we are engaged in certain legal proceedings, and the disclosure set forth in Note 23, "Commitments and Contingencies", relating to legal and other contingencies is incorporated by reference into this Item 3.

Item 4. Mine Safety Disclosures

Not applicable.

PART II

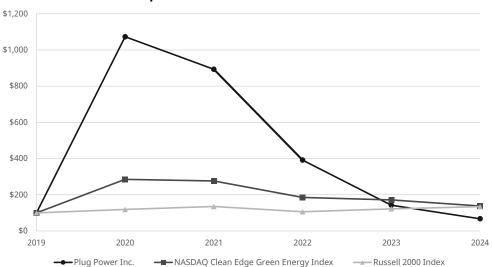
Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

Market Information and Holders of Record. Our common stock is traded on the NASDAQ Capital Market under the symbol "PLUG". As of February 18, 2025, there were approximately 1,429 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 exceeded 610,750.

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 debt agreements, if any, and such other factors as our Board may consider.

Five-Year Performance Graph. Below is a line graph comparing the 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, 2019 and ending December 31, 2024. 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, 2019 and the reinvestment of all dividends, if any.

Comparison of Cumulative Total Return



Index	2	2019		2020	2021	2022	2023	2024
Plug Power Inc.	\$ 1	100.00	\$1	,073.10	\$ 893.35	\$ 391.46	\$ 142.41	\$ 67.41
NASDAQ Clean Edge Green Energy								
Index	\$ 1	100.00	\$	284.98	\$ 276.29	\$ 185.31	\$ 171.49	\$ 137.98
Russell 2000 Index	\$ 1	100.00	\$	118.96	\$ 135.24	\$ 106.10	\$ 122.11	\$ 134.34

- 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, 2019 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 2022 was included in the Company's Annual Report on Form 10-K for the year ended December 31, 2022 on page 42 under Part II, Item 7, "Management's Discussion and Analysis of Financial Position and Results of Operations", which was filed with the SEC on March 1, 2023.

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 clean 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) production of hydrogen; and (c) 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. 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 product and service portfolio includes:

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

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; our GenSure High Power Fuel Cell Platform supports large scale stationary power and data center markets.

Progen: Progen is our fuel cell stack and engine technology currently used globally in mobility and stationary fuel cell systems. This includes Plug's membrane electrode assembly ("MEA"), a critical component of the fuel cell stack used in zero-emission fuel cell systems.

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.

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.

Electrolyzers: The design and implementation of 5MW 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.

Liquid Hydrogen: Liquid hydrogen provides an efficient fuel alternative to fossil-based energy. We produce liquid hydrogen through our electrolyzer systems and liquefaction systems. Liquid hydrogen supply will be used by customers in material handling operations, fuel cell electric vehicle fleets, and stationary power applications.

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, with the United Kingdom also taking steps in this direction, 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 our electrolyzer business.

Liquidity and Capital Resources

A summary of our consolidated sources and uses of cash, cash equivalents and restricted cash was as follows (in thousands):

	Year ended						
	December 31, 2024			ember 31, 2023	December 31, 2022		
Net cash (used in) provided by:							
Operating activities	\$	(728,643)	\$	(1,106,570)	\$	(828,623)	
Investing activities		(402,364)		728,052		(679,370)	
Financing activities		983,170		6,117		(77,457)	
	\$	(147,837)	\$	(372,401)	\$	(1,585,450)	

Operating Activities

The net cash used in operating activities for the year ended December 31, 2024 and 2023 was \$728.6 million and \$1.1 billion, respectively. This decrease in net cash used in operating activities was primarily due to cash inflows related to the Company's accounts receivables and inventory, partially offset by an increase in net loss, a decrease in accounts payable, accrued expenses, and other liabilities and a decrease in deferred revenue and other contract liabilities.

Investing Activities

The net cash (used in)/provided by investing activities for the year ended December 31, 2024 and 2023 was (\$402.4) million and \$728.1 million, respectively. The change from cash inflow to cash outflow from investing activities was primarily due to a decrease in proceeds from sales and maturities of available-for-sale securities during the year ended December 31, 2024 as the Company no longer holds available-for-sale securities.

Financing Activities

The net cash provided by financing activities for the year ended December 31, 2024 and 2023 was \$983.2 million and \$6.1 million, respectively. The increase in cash provided by financing activities was primarily driven by proceeds from the At Market Issuance Sales Agreement, as amended (as described below), with B. Riley Securities, Inc. ("B. Riley")

and proceeds from the convertible debenture during the year ended December 31, 2024, partially offset by a decrease in proceeds from finance obligations.

The Company has continued to experience negative cash flows from operations and net losses. The Company incurred net losses of approximately \$2.1 billion, \$1.4 billion and \$724.0 million for the years ended December 31, 2024, 2023 and 2022, respectively, and had an accumulated deficit of \$6.6 billion as of December 31, 2024. The Company's working capital was \$729.0 million at December 31, 2024, which included unrestricted cash and cash equivalents of \$205.7 million and current restricted cash of \$198.0 million.

The future use of our available liquidity will be based upon the ongoing review of the funding needs of our businesses, the optimal allocation of our resources, and the timing of cash flow generation. To the extent that we desire to access alternative sources of capital, market conditions could adversely impact our ability to do so at that time and at terms favorable to the Company.

The Company has an "at-the-market" equity offering program with B. Riley pursuant to which the Company may, from time to time, offer and sell through or to B. Riley, as sales agent or principal, shares of the Company's common stock, having an aggregate gross sales price of up to \$1.0 billion under a sales agreement. The Company has the right at its sole discretion to direct B. Riley to act on a principal basis and purchase directly from the Company up to \$11.0 million of shares of its common stock on any trading day if the Company's market capitalization is more than \$1.0 billion (or up to \$10.0 million if the Company's market capitalization is less than \$1.0 billion (or up to \$30.0 million if the Company's market capitalization is more than \$1.0 billion (or up to \$30.0 million if the Company's market capitalization is less than \$1.0 billion). On February 23, 2024 and November 7, 2024, the Company and B. Riley amended the at-the-market equity program to increase the aggregate offering price of shares of common stock available for issuance under the program to \$1.0 billion. The amended program will terminate upon the earliest of (a) December 31, 2025 with respect to principal transactions and January 17, 2026 with respect to agency transactions, (b) the sale of all shares of common stock under the program or (c) termination of the sales agreement. During the year ended December 31, 2024, the Company issued 219,835,221 shares of its common stock at a weighted-average sales price of \$3.08 per share for net proceeds of \$666.9 million under the ATM agreement.

On July 22, 2024, the Company sold 78,740,157 shares of its common stock at a public offering price of \$2.54 per share for net proceeds of \$191.0 million after deducting the underwriting discount and related offering expenses.

On November 11, 2024, the Company entered into a Debenture Purchase Agreement (the "Debenture Purchase Agreement") with YA II PN, Ltd., an investment fund managed by Yorkville Advisors Global, LP ("Yorkville"), pursuant to which the Company issued to Yorkville an unsecured convertible debenture in aggregate principal amount of \$200.0 million in exchange for the payment of \$190.0 million. For more information, see Note 17, "Convertible Senior Notes".

In addition, on February 10, 2025, the Company entered into a Standby Equity Purchase Agreement with Yorkville (the "SEPA"), pursuant to which the Company has the right, at its option, to sell to Yorkville up to \$1.0 billion in the aggregate gross sales of its common stock, subject to certain limitations and conditions set forth therein. The Company has the right, but not the obligation, from time to time at its sole discretion to direct Yorkville to purchase directly from the Company up to \$10.0 million shares of its common stock on any trading day.

On March 3, 2025, the Company announced the 2025 Restructuring Plan. The 2025 Restructuring Plan includes initiatives to reduce our workforce, realign the Company's manufacturing footprint and streamline the organization to enhance operational efficiency and improve overall liquidity. The expected annual savings from the 2025 Restructuring Plan are expected to be significant and will begin to be realized beginning in the second half of 2025.

The Company believes that its working capital, cash position and restricted cash to be released over the next 12 months, together with its right to direct B. Riley to purchase shares from the Company under the "at-the-market" equity offering program and its right to direct Yorkville to purchase shares from the Company under the SEPA, will be sufficient to fund its on-going operations for a period of at least 12 months subsequent to the issuance of the accompanying consolidated financial statements.

The Company's significant obligations consisted of the following as of December 31, 2024:

- Operating and finance leases totaling \$313.4 million and \$35.6 million, respectively, of which \$71.3 million and \$12.8 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 \$347.4 million, of which approximately \$83.1 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 \$379.3 million, of which \$58.3 million is due within the next twelve months. See Note 17, "Convertible Senior Notes", for more details.
- Capital commitments totaling \$4.6 million related to the Company's equity method investments, of which all \$4.6 million is due within the next 12 months. See Note 4, "Investments", for more details.
- Future payments under non-cancelable unconditional purchase obligations with a remaining term in excess of one year totaling \$156.5 million, of which \$40.9 million is due within the next 12 months. See Note 23, "Commitments and Contingencies", for more details.
- Contingent consideration with an estimated fair value of approximately \$60.7 million, of which \$29.0 million is due within the next 12 months. See Note 5, "Fair Value Measurements", for more details.

SEC Settlement

On August 30, 2023, the Company reached a settlement of a civil administrative proceeding with the SEC related to the Company's restatement of its previously issued financial statements as of and for the years ended December 31, 2019 and 2018, and as of and for each of the quarterly periods ended March 31, 2020 and 2019, June 30, 2020 and 2019, and September 30, 2020 and 2019. The Company, without admitting or denying the findings, agreed to a cease-and-desist order regarding Sections 13(a), 13(b)(2)(A), and 13(b)(2)(B) of the Exchange Act and Rules 13a-1, 13a-13, and 13a-15(a) - (c) thereunder. As part of the settlement, the Company paid a civil monetary penalty to the SEC in the amount of \$1.25 million on September 20, 2023. On August 30, 2024, the Company certified with the SEC staff that the Company completed the undertakings set forth in the SEC settlement, which included fully remediating its material weaknesses. After reviewing the evidence of compliance provided by the Company, the SEC found that the evidence provided satisfied the undertaking requirement.

Restructuring Plans

In February 2024, in a strategic move to enhance the Company's financial performance and ensure long-term value creation in a competitive market, the Company approved the 2024 Restructuring Plan, a comprehensive initiative that encompassed a broad range of measures, including operational consolidation, strategic workforce adjustments, and various other cost-saving actions. In March 2025, the Company approved another initiative, the 2025 Restructuring Plan, which included initiatives to reduce the Company's workforce, realign the Company's manufacturing footprint and streamline the organization to enhance operational efficiency and improve overall liquidity. The expected annual savings from the 2025 Restructuring Plan are expected to be significant and will begin to be realized beginning in the second half of 2025.

Department of Energy Loan Guarantee

On May 14, 2024, the U.S. Department of Energy (the "DOE") issued a conditional commitment letter to the Company and a wholly owned indirect subsidiary of the Company for a loan guarantee of up to \$1.66 billion through the DOE's Loan Programs Office to finance the development, construction, and ownership of up to six green hydrogen production facilities. On January 16, 2025, the Company closed its loan guarantee from the DOE that is intended to support the Company's domestic hydrogen production plant buildout. The approval and funding of any disbursements of the loan guarantee will be subject to the satisfaction of conditions precedent, including, but not limited to, evidence of satisfaction

of certain technical and performance related conditions precedent, adequate project funding, reports from certain technical consultants and advisors, and the receipt of certain financial models demonstrating compliance with the financial covenants set forth in the loan guarantee agreement. There can be no assurance that the Company will be able to secure such a loan or on terms that are acceptable to the Company. See Item 1A, "Risk Factors", for a description of risks related to the DOE loan guarantee.

Inflation, Material Availability and Labor Shortages

Most components essential to our business are generally available from multiple sources; however, we believe there are some component suppliers and manufacturing vendors, particularly those suppliers and vendors that supply materials in very limited supply worldwide or supply commodities that have a high degree of volatility, whose loss to us or general unavailability could have a material adverse effect upon our business and financial condition. For example, although we believe the liquid hydrogen supply challenges of the past may have lessened in recent months, we may again experience similar challenges relating to the availability of hydrogen, including but not limited to suppliers utilizing force majeure provisions under existing contracts as they have in the past, which could negatively impact the amount of hydrogen we are able to provide under certain of our hydrogen supply agreements and other customer agreements. Furthermore, global commodity pricing has been volatile and has been influenced by political events and worldwide economic trends, which has impacted our sourcing strategies, resulting in adverse impacts on our business and financial condition. We have mitigated and are continuing to mitigate these risks by continuing to diversify our supply chain, including diversifying our global supply chain and implementing alternate system architectures that we expect will allow us to source from multiple fuel cell, electrolyzer stack and air supply component vendors. While we continue to invest in our supply chain to improve its resilience with a focus on automation, dual sourcing of critical components, insourcing and localized manufacturing when feasible, we are also working closely with these vendors and other key suppliers on coordinated product introduction plans, product and sales forecasting, strategic inventories, and internal and external manufacturing schedules and levels. However, ongoing changes to, and evolution of, our products designs such as simultaneous design/build efforts and new product serviceability trends, or incorrect forecasting or updates to previously forecasted volumes could present challenges to those strategies despite best efforts in leveraging supplier relationships and capabilities. With respect to production, although cost pressures from global energy prices and inflation have been less volatile than previous years, an increase in cost pressures or a rise in inflation could negatively affect our business again, which could have a pricing impact on our key raw materials. We have a regionally diverse supply chain, and in cases where we have single sourced suppliers (typically due to new technology and products or worldwide shortages due to global demand), we work to engineer alternatives in our product design or develop new supply sources while covering short- and medium-term risks with supply contracts, building up inventory, and development partnerships. However, if we are unable to reduce such inventory, that could tie up working capital.

We continue to take proactive steps through our supply chain team to limit the impact of supplier challenges generally and we continue to work closely with our suppliers and transportation vendors to ensure availability of products and implement other cost savings initiatives. In addition, we have continued discussions with suppliers with respect to the terms of our supply agreements, and the outcome of such discussions, including whether those discussions yield the desired modifications in the terms of such supply agreements, may impact the timing of when we receive shipments of certain supplies or result in other supply chain issues.

With respect to our service business, we have experienced inflationary increases in labor, parts and related overhead. This has contributed to the increase in our estimated projected costs to service fuel cell systems and related infrastructure, which resulted in an increase in the provision for loss contracts related to service. If these trends continue, we may have to record additional service loss provisions in the future. We anticipate bookings and revenue will be uneven in the near-term while we pursue sales opportunities.

Additionally, we, as well as our suppliers and vendors, have observed an increasingly competitive labor market. Tight labor markets have resulted in longer times to fill open positions for us and our suppliers and vendors. Increased employee turnover, reassessment of employee responsibilities given current business needs, changes in the availability of our workers as well as labor shortages have resulted in, and could continue to result in, increased costs which could negatively affect our component or raw material purchasing abilities, and in turn, our financial condition, results of operations, or cash flows.

Results of Operations

Our primary sources of revenue are from sales of equipment, related infrastructure and other, services performed on fuel cell systems and related infrastructure, power purchase agreements, and fuel delivered to customers and related equipment. 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 equipment, related infrastructure and other represents sales of our GenDrive units, GenSure stationary backup power units, cryogenic stationary and on road storage, hydrogen liquefaction systems, 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 power purchase agreements primarily represent payments received from customers who make monthly payments to access the Company's GenKey solution. Revenue associated with fuel delivered to customers and related equipment represents the sale of hydrogen to customers that has been purchased by the Company from a third party or generated at our hydrogen production plants.

Provision for Common Stock Warrants

On August 24, 2022, the Company issued to Amazon.com NV Investment Holdings LLC, a wholly owned subsidiary of Amazon ("Amazon"), a warrant (the "Amazon Warrant") to acquire up to 16,000,000 shares of the Company's common stock, subject to certain vesting events described below under "Common Stock Transactions – Amazon Transaction Agreement in 2022".

In 2017, in separate transactions, the Company issued a warrant to each of Amazon and Walmart to purchase up to 55,286,696 shares of the Company's common stock, subject to certain vesting events described below under "Common Stock Transactions – Amazon Transaction Agreement in 2017" and "Common Stock Transactions – Walmart Transaction Agreement". 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.

The amount of provision for the Amazon and Walmart warrants recorded as a reduction of revenue during the years ended December 31, 2024 and 2023, respectively, is shown in the table below (in thousands):

	Year ended				
	December 31, 2024	December 31, 2023			
Sales of equipment, related infrastructure and other	\$ (4,812)	\$ (566)			
Services performed on fuel cell systems and related infrastructure	(4,883)	(1,194)			
Power purchase agreements	(7,465)	(3,817)			
Fuel delivered to customers and related equipment	(21,824)	(5,632)			
Total	\$ (38,984)	\$ (11,209)			

Net revenue, cost of revenue, gross profit/(loss) and gross margin/(loss) for the years ended December 31, 2024 and 2023 were as follows (in thousands):

				Cost of Revenue		Gross	Gross
	Ne	Net Revenue				ofit/(Loss)	Margin/(Loss)
For the year ended December 31, 2024:							
Sales of equipment, related infrastructure and other	\$	390,335	\$	696,087	\$	(305,752)	(78.3)%
Services performed on fuel cell systems and related infrastructure		52,169		57,766		(5,597)	(10.7)%
Provision for loss contracts related to service		_		48,539		(48,539)	N/A
Power purchase agreements		77,842		216,947		(139,105)	(178.7)%
Fuel delivered to customers and related equipment		97,882		228,827		(130,945)	(133.8)%
Other		10,586		5,535		5,051	47.7 %
Total	\$	628,814	\$	1,253,701	\$	(624,887)	(99.4)%
For the year ended December 31, 2023:							
Sales of equipment, related infrastructure and other	\$	711,433	\$	765,575	\$	(54,142)	(7.6)%
Services performed on fuel cell systems and related infrastructure		39,093		75,412		(36,319)	(92.9)%
Provision for loss contracts related to service		_		86,346		(86,346)	N/A
Power purchase agreements		63,731		218,936		(155,205)	(243.5)%
Fuel delivered to customers and related equipment		66,246		246,318		(180,072)	(271.8)%
Other		10,837		6,544		4,293	39.6 %
Total	\$	891,340	\$	1,399,131	\$	(507,791)	(57.0)%

Net Revenue

Revenue — sales of equipment, related infrastructure and other. Revenue from sales of equipment, related infrastructure and other represents sales of our GenDrive units, GenSure stationary backup power units, cryogenic stationary and on road storage, hydrogen liquefaction systems, electrolyzers and hydrogen fueling infrastructure referred to at the site level as hydrogen installations. Revenue from sales of equipment, related infrastructure and other for the year ended December 31, 2024 decreased \$321.1 million, or 45.1%, to \$390.3 million from \$711.4 million for the year ended December 31, 2023 primarily due to decreases in revenue related to hydrogen site installations, liquefiers, cryogenic equipment, and fuel cell systems. The decrease in the revenue related to sales of cryogenic storage equipment and liquefiers of \$120.2 million was primarily due to product mix with respect to cryogenic equipment, fewer projects and a slower rate of progress on existing liquefier projects as they near completion compared to the year ended December 31, 2023. Revenue related to sales of fuel cell systems decreased \$129.1 million, primarily due to a decrease in the volume of GenDrive units sold, with 3,119 units sold during the year ended December 31, 2024 compared to 6,392 units sold during the year ended December 31, 2023. The decrease in hydrogen infrastructure revenue of \$114.5 million was primarily due to volume, with 15 hydrogen site installations for the year ended December 31, 2024 compared to 52 for the year ended December 31, 2023. Additionally, there was a decrease of \$10.3 million related to the sales of engineered oil and gas equipment from the Frames acquisition, for which sales are not expected to continue beyond current commitments. Furthermore, the pace of development of the hydrogen economy has been slower than anticipated and has impacted hydrogen equipment deployments. Finally, there was an increase in the provision for common stock warrants recorded as a reduction of revenue, which increased to \$4.8 million for the year ended December 31, 2024 compared to \$0.6 million for the year ended December 31, 2023. Partially offsetting these decreases was an increase in revenue related to electrolyzers of \$53.0 million, primarily due to 153 one megawatt equivalent units sold for the year ended December 31, 2024 compared to 133 one megawatt equivalent units sold for the year ended December 31, 2023. Included in the 153 one megawatt equivalent units sold for the year ended December 31, 2024 were 29 electrolyzer systems sold compared to two electrolyzer systems sold during the year ended December 31, 2023.

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, 2024 increased \$13.1 million, or 33.5%, to \$52.2 million from \$39.1 million for the year ended December 31, 2023. The increase in revenue from services performed on fuel cell systems and related infrastructure was primarily due to the increase in pricing of our service agreements and incidental billings. In addition, the average number of GenDrive units under maintenance contracts increased to 21,897 during the year ended December 31, 2024 compared to 20,336 during the year ended December 31, 2023. Partially offsetting this increase in revenue was an increase in the provision for common stock warrants recorded as a reduction of revenue, which increased to \$4.9 million for the year ended December 31, 2024 compared to \$1.2 million for the year ended December 31, 2023.

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, 2024 increased \$14.1 million, or 22.1%, to \$77.8 million from \$63.7 million for the year ended December 31, 2023. 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 31,763 GenDrive units under PPAs generating revenue in 2024, compared to 30,626 in 2023. In addition, the average number of hydrogen sites under PPA arrangements was 147 in 2024, compared to 132 in 2023. Furthermore, pricing rates were favorable during the year ended December 31, 2024 compared to the year ended December 31, 2023. Partially offsetting this increase in revenue was an increase in the provision for common stock warrants recorded as a reduction of revenue, which increased to \$7.5 million for the year ended December 31, 2024 compared to \$3.8 million for the year ended December 31, 2023.

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 at our hydrogen production plants. Revenue associated with fuel delivered to customers for the year ended December 31, 2024 increased \$31.7 million, or 47.9%, to \$97.9 million from \$66.2 million for the year ended December 31, 2023. The increase in revenue was primarily due to an increase in the number of sites with fuel contracts, which increased by approximately 15 sites during the year ended December 31, 2024. Furthermore, increased fuel prices were negotiated with certain customers during the second quarter of 2024. Partially offsetting this increase in revenue was an increase in the provision for common stock warrants recorded as a reduction of revenue, which increased to \$21.8 million for the year ended December 31, 2024 compared to \$5.6 million for the year ended December 31, 2023.

Cost of Revenue

Cost of revenue — sales of equipment, related infrastructure and other. Cost of revenue from sales of equipment, related infrastructure and other 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 equipment, related infrastructure and other for the year ended December 31, 2024 decreased \$69.5 million, or 9.1%, to \$696.1 million compared to \$765.6 million for the year ended December 31, 2023 primarily due to decreases in cost of revenue related to hydrogen site installations, liquefiers, cryogenic equipment, and fuel cell systems.

The decrease in cost of revenue related to sales of hydrogen infrastructure of \$82.3 million was primarily due to volume, with 15 hydrogen site installations during the year ended December 31, 2024 compared to 52 during the year ended December 31, 2023. Included in cost of revenue related to sales of hydrogen infrastructure were inventory valuation adjustments of \$4.2 million for the year ended December 31, 2024 compared to \$5.3 million for the year ended December 31, 2023.

The decrease in cost of revenue related to cryogenic storage equipment and liquefiers of \$83.1 million was primarily due to product mix with respect to cryogenic equipment and fewer projects and a slower rate of progress on existing liquefier projects as they near completion compared to the year ended December 31, 2023. Included in cost of revenue related to sales of cryogenic storage equipment and liquefiers were inventory valuation adjustments of \$4.2 million for the year ended December 31, 2023.

The cost of revenue related to sales of fuel cell systems decreased by \$15.5 million primarily due to a decrease in the volume of GenDrive units sold, with 3,119 units sold during the year ended December 31, 2024 compared to 6,392 units sold during the year ended December 31, 2023. Included in cost of revenue related to sales of fuel cell systems were inventory valuation adjustments of \$79.5 million for the year ended December 31, 2024 compared to \$24.0 million for the year ended December 31, 2023. The increases in inventory valuation adjustments were primarily related to lower sales volume at lower sales prices than previously experienced which resulted in higher lower of cost or realizable valuation adjustments.

Finally, there was a decrease in cost of revenue of \$8.9 million related to a decrease in sales of engineered equipment from the Frames acquisition, for which sales are not expected to continue beyond current commitments.

Partially offsetting these decreases was an increase in cost of revenue related to sales of electrolyzer stacks and systems of \$120.3 million primarily due to volume, with 153 one megawatt equivalent units sold for the year ended December 31, 2024 compared to 133 one megawatt equivalent units sold for the year ended December 31, 2024 were 29 electrolyzer systems sold compared to two electrolyzer systems sold during the year ended December 31, 2023. Included in cost of revenue related to sales of electrolyzer stacks and systems were inventory valuation adjustments of \$80.4 million for the year ended December 31, 2024 compared to \$55.6 million for the year ended December 31, 2023. The increases in inventory valuation adjustments were primarily related to additional costs incurred during the year ended December 31, 2024 as projects neared completion requiring additional lower of cost or net realizable valuation adjustments.

The gross loss generated from sales of equipment, related infrastructure and other increased to (78.3%) for the year ended December 31, 2024, compared to (7.6%) for the year ended December 31, 2023. The increase in gross loss was primarily due to inventory valuation adjustments described above, customer mix, lower margins on new product offerings and decline in volume which impacted leveraging of labor and overhead during 2024.

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, 2024 decreased \$17.6 million, or 23.3%, to \$57.8 million compared to \$75.4 million for the year ended December 31, 2023. The decrease in cost of revenue was primarily due to an increase in the release of the loss accrual, with a release of \$51.6 million during the year ended December 31, 2024 compared to a release of \$29.7 million during the year ended December 31, 2023. Included in cost of revenue related to services performed on fuel cell systems and related infrastructure were inventory valuation

adjustments of \$0.2 million for the year ended December 31, 2024 compared to \$0.7 million for the year ended December 31, 2023. Gross loss decreased to (10.7%) for the year ended December 31, 2024 compared to (92.9)% for the year ended December 31, 2023. The decrease in gross loss was primarily due to an increase in negotiated contract rates discussed above, as well as an increase in the release of the loss accrual during the year ended December 31, 2024.

Cost of revenue — provision for loss contracts related to service. The Company recorded a provision for loss accrual during 2024 of \$48.5 million, a decrease of \$37.8 million compared to the provision for loss accrual of \$86.3 million as of December 31, 2023. The Company decreased the provision primarily due to improved pricing structure and reduction of new GenDrive deployments in 2024, partially offset by an increase in the provision related to stationary systems.

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, 2024 decreased \$2.0 million, or 0.9%, to \$216.9 million from \$218.9 million for the year ended December 31, 2023. 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 31,763 GenDrive units under PPAs during the year ended December 31, 2024 compared to 30,626 during the year ended December 31, 2023. The average number of hydrogen sites under PPA arrangements was 147 during the year ended December 31, 2024 compared to 132 during the year ended December 31, 2023. Gross loss decreased to (178.7%) for the year ended December 31, 2024 compared to (243.5)% for the year ended December 31, 2023. The decrease in gross loss was primarily due to improved pricing.

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, 2024 decreased \$17.5 million, or 7.1%, to \$228.8 million from \$246.3 million for the year ended December 31, 2023. The decrease was primarily due to lower costs of purchased fuel, an increase in fuel internally produced by the Company, which is inherently lower in cost, as well as a recognition of the clean hydrogen production tax credit ("PTC") of \$4.0 million. Included in cost of revenue related to fuel delivered to customers and related equipment were inventory valuation adjustments of \$3.5 million for the year ended December 31, 2024 compared to \$6.5 million for the year ended December 31, 2023. Gross loss decreased to (133.8%) during the year ended December 31, 2024 compared to (271.8)% during the year ended December 31, 2023, primarily due to favorable fuel rates negotiated with certain customers, lower costs of purchased fuel, an increase in fuel internally produced by the Company and the decrease in inventory valuation adjustments described above.

Expenses

Research and development. Research and development expenses include: 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, 2024 decreased \$36.5 million, or 32.1%, to \$77.2 million from \$113.7 million for the year ended December 31, 2023. The decrease was primarily due to headcount reductions as well as a decrease in component materials which are used for testing, prototypes and proof of concept.

Selling, general and administrative. Selling, general and administrative expenses include 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, 2024 decreased \$46.4 million, or 11.0%, to \$376.1 million from \$422.5 million for the year ended December 31, 2023. The decrease was primarily due to a decrease in stock compensation expense related to stock compensation forfeitures resulting from the 2024 Restructuring Plan announced in February 2024 as well as certain market-condition awards nearing the end of their vesting period and reduction in spend as a result of cost cutting initiatives, partially offset by an increase in the allowance for credit losses on accounts receivable.

Restructuring. Expenses related to the 2024 Restructuring Plan for the year ended December 31, 2024 was \$8.2 million. The increase was due to severance and benefits related to the 2024 Restructuring Plan the Company announced in February 2024.

Impairment. The Company recorded an impairment charge of \$949.3 million for the year ended December 31, 2024, as compared to \$269.5 million for the year ended December 31, 2023. The increase was primarily due to the Company failing to meet 2024 sales and margin projections as well as decreased future cash flow projections across certain product lines including stationary, liquefiers and fuel cells for mobility projects related to HyVia. Additionally, the Company paused certain hydrogen production plant projects during 2024. This pause, as well as the decrease in cash flow projections, was primarily due to weakening demand in the global hydrogen market. As a result, the Company tested the recoverability of its long-lived assets and finite-lived intangibles by comparing the carrying values against undiscounted future cash flow projections and determined that an impairment existed.

The Company recorded impairment of goodwill of \$0 for the year ended December 31, 2024, as compared to \$249.5 million for the year ended December 31, 2023. The Company performs an impairment review of goodwill on an annual basis at October 1, and when a triggering event is determined to have occurred between annual impairment tests. Based on the results of our quantitative impairment analysis, the Company recognized an impairment charge of \$249.5 million for the year ended December 31, 2023. As of December 31, 2024 and 2023, the Company had no goodwill.

Change in fair value of contingent consideration. The change in fair value of contingent consideration is related to earnouts for the Giner ELX, Inc. ("Giner"), United Hydrogen Group Inc. ("UHG"), Frames, and Joule acquisitions. The change in fair value for the year ended December 31, 2024 and 2023 was \$(15.8) million and \$30.0 million, respectively. The decrease was primarily due a decrease in the fair value of contingent consideration for Joule's earn-out of \$14.3 million during the year ended December 31, 2024 due to changes in management assumptions.

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, 2024 decreased \$25.1 million, or 45.0%, as compared to the year ended December 31, 2023. The decrease during the year ended December 31, 2024 compared to December 31, 2023 was primarily due to the maturities and sale of the Company's available-for-sale portfolio of higher-yielding U.S. treasury securities during 2023.

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, 2024 increased \$1.4 million, or 3.1%, as compared to the year ended December 31, 2023. The increase was primarily due to an increase in the average balance of the Company's debt during the year ended December 31, 2024, which was driven by the 6.00% Convertible Debenture.

Other income/(expense), net. Other income/(expense), net primarily consists of foreign currency translation and gains and losses related to energy contracts. Other expense, net increased \$19.9 million, or 19900.0%, during the year ended December 31, 2024 as compared to the year ended December 31, 2023. The increase was primarily due to losses related to energy contracts and foreign currency losses during the year ended December 31, 2024.

Realized loss on investments, net. Realized loss on investments, net consists of the sales related to available-for-sale debt securities and equity securities. For the year ended December 31, 2024, the Company had \$0 net realized loss on investments as compared to \$12.8 million for the year ended December 31, 2023. An other-than-temporary impairment charge of \$10.8 million on the Company's available-for-sale securities was taken during the third quarter of 2023 and was due to a change in the Company's ability and intent to retain these investments for a period of time sufficient to allow for any anticipated recovery in the fair value. The other-than-temporary impairment charge was realized when the Company sold its remaining available-for-sale securities and equity securities during the fourth quarter of 2023.

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, 2024, the change in fair value of equity securities was \$0 as compared to an increase of \$11.4 million for the year ended December 31, 2023. The decrease was due to the Company selling its remaining equity securities during the fourth quarter of 2023.

Loss on extinguishment of convertible senior notes and debt. Loss on extinguishment of convertible senior notes and debt consists of losses that arise from retirement of the Company's convertible senior notes and debt before maturity.

For the year ended December 31, 2024, the Company had loss on extinguishment of convertible senior notes and debt of \$16.3 million as compared to loss on extinguishment of convertible senior notes and debt of \$0 for the year ended December 31, 2023. These losses are driven from the exchange of \$138.8 million in aggregate principal amount of the Company's 3.50% Convertible Senior Notes for \$140.4 million in aggregate principal amount of the Company's new 7.00% Convertible Senior Notes during the first quarter of 2024.

Change in fair value of debt. Change in fair value of debt consists of losses that arise from the changes in fair value of the Company's 6.00% Convertible Debenture. For the year ended December 31, 2024, the Company had change in fair value of debt of \$3.4 million as compared to change in fair value of debt of \$0 for the year ended December 31, 2023. These losses are driven from the fair value changes that arose from the re-measurement of the Company's 6.00% Convertible Debenture as of December 31, 2024 compared to its fair value upon issuance.

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, SK Plug Hyverse, which is our 49/51 joint venture with SK Innovation, and Clean H2 Infra Fund. For the year ended December 31, 2024, the Company recorded a loss of \$32.2 million on equity method investments as compared to a loss of \$41.8 million for the year ended December 31, 2023. These losses are driven from the start-up activities for commercial and production operations of the aforementioned investments.

Income Taxes

The Company recorded \$2.7 million of income tax benefit and \$7.4 million of income tax benefit for the year ended December 31, 2024 and 2023, respectively. The income tax benefit for the year ended December 31, 2024 was due to an incremental change to the valuation allowance recorded in foreign jurisdictions. The Company has not changed its overall conclusion with respect to the need for a valuation allowance against its net deferred tax assets in the U.S., which remain fully reserved. Except for a few service entities mainly in Europe, 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. As of December 31, 2024, the Company's Netherlands subsidiary established a full valuation allowance on its deferred tax assets that will not be realized.

The domestic net deferred tax asset generated from the Company's net operating loss has been offset by a full valuation allowance because it is more likely than not that the tax benefits of the net operating loss carryforward will not be realized. The Company recognizes accrued interest and penalties related to unrecognized tax benefits, if any, as a component of income tax expense.

The Organization for Economic Co-operation and Development Inclusive Framework on Base Erosion and Profit Shifting has proposed a global minimum corporate tax rate of 15% on multi-national corporations, commonly referred to as the Pillar Two rules that has been agreed upon in principle by over 140 countries. While the United States has not adopted the Pillar Two rules, numerous foreign countries have enacted legislation to implement the Pillar Two rules, effective beginning January 1, 2024, or are expected to enact similar legislation. As of December 31, 2024, the Company did not meet the consolidated revenue threshold and is not subject to the GloBE Rules under Pillar Two. The Company will continue to monitor the implementation of rules in the jurisdictions in which it operates.

Public and Private Offerings of Equity and Debt

"At-the-Market" Equity Offering Program

On January 17, 2024, the Company entered into the At Market Issuance Sales Agreement the Original ATM Agreement (the "ATM Agreement") with B. Riley, pursuant to which the Company may, from time to time, offer and sell through or to B. Riley, as sales agent or principal, shares of the Company's common stock, having an aggregate gross sales price of up to \$1.0 billion. On each of February 23, 2024 and November 7, 2024, the Company amended the ATM Agreement to increase the amount of shares of the Company's common stock available for sale under the Amended ATM Agreement to \$1.0 billion. During the year ended December 31, 2024, the Company sold 219,835,221 shares of common stock at a weighted-average sales price of \$3.08 per share for gross proceeds of \$677.2 million with related issuance costs of \$10.4 million. As of December 31, 2024, the Company had \$1.0 billion remaining under the "at-the-market" equity offering program for future sales of common stock.

Underwritten Public Offering of Common Stock

On July 22, 2024, the Company sold 78,740,157 shares of its common stock at a public offering price of \$2.54 per share for net proceeds of \$191.0 million after deducting the underwriting discount and related offering expenses.

Secured Debt

During the second quarter of 2024, the Company began repaying the principal and interest on a \$2.0 million allowance for tenant work related to its manufacturing facility in Slingerlands, NY. In accordance with ASC 842, Leases ("ASC 842"), the allowance is treated as a freestanding financial instrument separate from the facility lease and is accounted for as long-term debt. The outstanding principal and carrying value of the debt was \$1.7 million as of December 31, 2024, \$0.2 million and \$1.5 million of which was classified as short-term and long-term, respectively, on the accompanying consolidated balance sheets.

In June 2020, the Company acquired debt as part of the acquisition of UHG. The outstanding carrying value of the debt was \$1.2 million and \$3.9 million as of December 31, 2024 and 2023, respectively. As of December 31, 2024, the outstanding principal on the debt was \$2.1 million and the unamortized debt discount was \$0.9 million, of which \$0.4 million and \$0.5 million was classified as short-term and long-term, respectively, bearing varying interest rates ranging from 7.3% to 7.6%. The debt is scheduled to mature in 2026. As of December 31, 2024, the principal balance was due at each of the following dates (in thousands):

December 31, 2025	1,200
December 31, 2026	900
Total outstanding principal	\$ 2,100

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 statements of operations.

6.00% Convertible Debenture

On November 11, 2024, the Company entered into the Debenture Purchase Agreement pursuant to which the Company issued to Yorkville a convertible debenture (the "6.00% Convertible Debenture") in exchange for the payment of \$190.0 million. The 6.00% Convertible Debenture was issued in a private placement in reliance upon an exemption from registration provided by Section 4(a)(2) of the Securities Act. The 6.00% Convertible Debenture ranks pari passu in right of payment with all other outstanding and future senior indebtedness of the Company.

The 6.00% Convertible Debenture bears interest at a rate of 6.00% per annum and is payable on the second year anniversary of the issuance date of the 6.00% Convertible Debenture (the "Maturity Date") or earlier redemption date. The interest rate will increase to a rate of 16.0% per annum upon the occurrence and during the continuance of an event of default under the 6.00% Convertible Debenture.

The 6.00% Convertible Debenture provides that Yorkville may convert all or any portion of the principal amount of the 6.00% Convertible Debenture, together with any accrued and unpaid interest thereon, at an initial conversion price of \$2.90 (the "Fixed Price"), representing a conversion premium of 146% to the last reported sale price of the Company's common stock on November 11, 2024. In certain circumstances, Yorkville will be permitted to convert up to \$22.5 million aggregate principal amount of the 6.00% Convertible Debenture plus accrued and unpaid interest thereon, each calendar month beginning with December 2024, at a conversion price equal to the lower of the (1) Fixed Price and (2) 97.25% of the lowest daily volume-weighted average price for the Company's common stock during the three trading days immediately preceding the applicable conversion date (the "Market Price"); provided that such Market Price is not less than \$0.3941 (the "Floor Price"). The Fixed Price is subject to adjustment in certain circumstances including if the Company issues shares of common stock at price per share that is less than the Fixed Price or certain convertible securities with a conversion price that is less than the Fixed Price (the "Dilutive Price"), in which case the Fixed Price would be adjusted to equal the Dilutive Price, subject to certain exceptions. Yorkville is not permitted to convert the 6.00% Convertible Debenture to the extent that the shares of common stock deliverable upon conversion thereof would exceed

19.99% of the Company's outstanding shares immediately prior to executing the Debenture Purchase Agreement (the "Exchange Cap") without prior stockholder approval.

If (1) the volume-weighted average price of the Company's common stock is below the Floor Price for a specified period of time, (2) the Company has issued more than 99% of the shares of common stock available under the Exchange Cap or (3) a registration default has occurred with respect to the resale registration statement registering the shares of common stock potentially underlying the 6.00% Convertible Debenture, then Yorkville may require the Company to redeem or convert, at the Company's discretion, \$22.5 million of the principal amount of the 6.00% Convertible Debenture, a premium thereon equal to 2.75% of such principal amount and accrued interest thereon on a monthly basis, unless and until such event is cured in accordance with the provisions of the 6.00% Convertible Debenture.

The Company has the right to redeem the 6.00% Convertible Debenture if the volume-weighted average price of the Company's common stock is less than the Fixed Price at a redemption price equal to 102.75% of the principal amount redeemed plus accrued and unpaid interest thereon. The Company also has the right to redeem the 6.00% Convertible Debenture if the volume-weighted average price of the Company's common stock is equal to or greater than the product of 1.3793 and the Fixed Price at a redemption price equal to 102.75% of the principal amount redeemed plus accrued and unpaid interest thereon or, in certain circumstances, 105.0% of the principal amount redeemed plus accrued and unpaid interest thereon.

The change in the carrying amount of the 6.00% Convertible Debenture for the year ended December 31, 2024 was as follows (in thousands):

	Decer	mber 31, 2024
Principal received at issuance	\$	190,000
Payments of principal settled in cash		(22,500)
Payments or principal settled in common stock		_
Loss on debt extinguishment		1,613
Change in fair value of the convertible senior note		3,424
Amortization of discount		613
Ending balance as of December 31, 2024	\$	173,150

The following table summarizes the total interest expense and effective interest rate related to the 6.00% Convertible Debenture for the year ended December 31, 2024 (in thousands, except for the effective interest rate):

	Year ended December 31, 2024
Interest expense	\$ 1,596
Amortization of discount	613
Total	\$ 2,209
Effective interest rate	8.7 %

7.00% Convertible Senior Notes

On March 20, 2024, the Company entered into separate, privately negotiated exchange agreements with certain holders of the Company's outstanding 3.75% Convertible Senior Notes pursuant to which the Company exchanged \$138.8 million in aggregate principal amount of the 3.75% Convertible Senior Notes, and accrued and unpaid interest of \$1.6 million on such notes to, but excluding, March 20, 2024, for \$140.4 million in aggregate principal amount of the Company's new 7.00% Convertible Senior Notes due 2026, in each case, pursuant to the exemption from registration provided by Section 4(a)(2) under the Securities Act. Following the exchange, approximately \$58.5 million in aggregate principal amount of the 3.75% Convertible Senior Notes remained outstanding with terms unchanged.

This transaction was accounted for as an extinguishment of debt. As a result, the Company recorded a loss on extinguishment of debt of \$14.0 million in the consolidated statements of operations during the first quarter of 2024. Loss on extinguishment of debt arises from the difference between the net carrying amount of the Company's debt and the fair value of the assets transferred to extinguish the debt.

The 7.00% Convertible Senior Notes are the Company's senior, unsecured obligations and are governed by the terms of an Indenture (the "Indenture"), dated as of March 20, 2024, entered into between the Company and Wilmington Trust, National Association, as trustee. The 7.00% Convertible Senior Notes bear cash interest at the rate of 7.00% per annum, payable semi-annually in arrears on June 1 and December 1 of each year, beginning on June 1, 2024, to holders of record at the close of business on the preceding May 15 and November 15, respectively. The 7.00% Convertible Senior Notes mature on June 1, 2026, unless earlier converted or redeemed or repurchased by the Company.

The conversion rate for the 7.00% Convertible Senior Notes is initially 235.4049 shares of the Company's common stock per \$1,000 principal amount of 7.00% Convertible Senior Notes, which is equivalent to an initial conversion price of approximately \$4.25 per share of common stock, which represents a premium of approximately 20% over the last reported sale price of the Company's common stock on the Nasdaq Capital Market on March 12, 2024. The conversion rate and conversion price are subject to customary adjustments upon the occurrence of certain events. Prior to the close of business on the business day immediately preceding December 1, 2025, the 7.00% Convertible Senior Notes will be convertible at the option of the holders of the 7.00% Convertible Senior Notes only upon the satisfaction of specified conditions and during certain periods. On or after December 1, 2025 until the close of business on the second scheduled trading day immediately preceding the maturity date, the 7.00% Convertible Senior Notes will be convertible at the option of the holders of the 7.00% Convertible Senior Notes at any time regardless of these conditions. Conversions of the 7.00% Convertible Senior Notes will be settled in cash, shares of the Company's common stock, or a combination thereof, at the Company's election.

Subject to certain exceptions and subject to certain conditions, holders of the 7.00% Convertible Senior Notes may require the Company to repurchase their 7.00% Convertible Senior Notes upon the occurrence of a "Fundamental Change" (as defined in the Indenture) prior to maturity for cash at a repurchase price equal to 100% of the principal amount of the 7.00% Convertible Senior Notes to be repurchased plus accrued and unpaid interest, if any, to, but excluding, the repurchase date.

The 7.00% Convertible Senior Notes will be redeemable, in whole or in part, at the Company's option at any time on or after June 5, 2025, at a cash redemption price equal to the principal amount of the 7.00% Convertible Senior Notes to be redeemed, plus accrued and unpaid interest, if any, to, but excluding, the redemption date, but only if the last reported sale price per share of the Company's common stock exceeds 130% of the then-applicable 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.

In certain circumstances, conversions of 7.00% Convertible Senior Notes in connection with "Make-Whole Fundamental Changes" (as defined in the Indenture) or conversions of 7.00% Convertible Senior Notes called for redemption may result in an increase to the conversion rate, provided that the conversion rate will not exceed 282.4859 shares of the Company's common stock per \$1,000 principal amount of 7.00% Convertible Senior Notes, subject to adjustment. In such circumstance, a maximum of 39,659,890 shares of common stock, subject to adjustment, may be issued upon conversion of the 7.00% Convertible Senior Notes. There were no conversions of the 7.00% Convertible Senior Notes during the year ended December 31, 2024.

The 7.00% Convertible Senior Notes consisted of the following (in thousands):

	Dece	mber 31, 2024
Principal amounts:		
Principal	\$	140,396
Unamortized debt premium, net of offering costs ⁽¹⁾		7,514
Net carrying amount	\$	147,910

⁽¹⁾ Included in the consolidated balance sheets within convertible senior notes, net and amortized over the remaining life of the notes using the effective interest rate method.

The following table summarizes the total interest expense and effective interest rate related to the 7.00% Convertible Senior Notes for the year ended December 31, 2024 (in thousands, except for the effective interest rate):

	Year ended
	December 31, 2024
Interest expense	\$ 7,687
Amortization of premium	(4,085)
Total	\$ 3,602
Effective interest rate	3.0 %

The estimated fair value of the 7.00% Convertible Senior Notes as of December 31, 2024 was approximately \$112.5 million. The fair value estimation was primarily based on a quoted price in an active market.

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 in a private placement to qualified institutional buyers pursuant to Rule 144A under 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. On March 12, 2024, the Company exchanged \$138.8 million in aggregate principal amount of the 3.75% Convertible Senior Notes for \$140.4 million in aggregate principal amount of the Company's new 7.00% Convertible Senior Notes due 2026. Following the exchange, approximately \$58.5 million in aggregate principal amount of the 3.75% Convertible Senior Notes remained outstanding with terms unchanged.

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. There were no conversions of the 3.75% Convertible Senior Notes during the years ended December 31, 2024 and 2023.

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 years ended December 31, 2023 and 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):

	De	ecember 31, 2024	De	cember 31, 2023
Principal amounts:				
Principal	\$	58,462	\$	197,278
Unamortized debt issuance costs ⁽¹⁾		(189)		(2,014)
Net carrying amount	\$	58,273	\$	195,264

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.

The following table summarizes the total interest expense and effective interest rate related to the 3.75% Convertible Senior Notes for the year ended December 31, 2024 (in thousands, except for effective interest rate):

	<u></u>		Ye	ear ended		
	Decem	ber 31, 2024	r 31, 2024 Decem		Decer	nber 31, 2022
Interest expense	\$	3,335	\$	7,546	\$	7,398
Amortization of debt issuance costs		642		1,345		1,286
Total	\$	3,977	\$	8,891	\$	8,684
Effective interest rate		4.5 %	6	4.6 %	ó	4.5 %

The estimated fair value of the 3.75% Convertible Senior Notes as of December 31, 2024 and 2023 was approximately \$44.9 million and \$213.2 million, respectively. The fair value estimation was primarily based on a quoted price in an active market.

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 sheets at the time the transactions were entered into. The book value of the 3.75% Notes Capped Call is not remeasured.

Common Stock Transactions

Amazon Transaction Agreement in 2022

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

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 2022 Amazon Warrant are subject to customary antidilution adjustments.

On August 24, 2022, 1,000,000 of the 2022 Amazon Warrant Shares associated with tranche 1 vested. The warrant fair value associated with the vested shares of tranche 1 of \$20.4 million was capitalized to contract assets 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. As of December 31, 2024, the balance of the contract asset related to tranche 1 was \$16.5 million which is recorded in contract assets in the Company's consolidated balance sheets. During the second quarter of 2023, all 1,000,000 of the Amazon Warrant Shares associated with tranche 2 vested. The warrant fair value

associated with the vested shares of tranche 2 was \$20.4 million and was determined on the grant date of August 24, 2022. As of December 31, 2024, the balance of the contract asset related to tranche 2 was \$16.5 million. Tranche 3 will vest over the next \$1.0 billion of collections from Amazon and its affiliates. The grant date fair value of tranche 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. As of December 31, 2024, the balance of the contract asset related to tranche 3 was \$0.2 million. Because the exercise price has yet to be determined, if probable of vesting, 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.

As of December 31, 2024 and 2023, 3,000,000 and 2,000,000 of the 2022 Amazon Warrant Shares had vested, respectively, and none of the 2022 Amazon Warrant Shares had been exercised. The total amount of provision for common stock warrants recorded as a reduction of revenue for the 2022 Amazon Warrant during the years ended December 31, 2024, 2023 and 2022 was \$19.0 million, \$4.9 million and \$5.2 million, respectively.

Amazon Transaction Agreement in 2017

On April 4, 2017, the Company and Amazon entered into a Transaction Agreement (the "2017 Amazon Transaction Agreement"), pursuant to which the Company agreed to issue to Amazon.com NV Investment Holdings LLC, a warrant (the "2017 Amazon Warrant") to acquire up to 55,286,696 shares (the "2017 Amazon Warrant Shares") of the Company's common stock, subject to certain vesting events. 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 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. 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.

As of December 31, 2024 and 2023, all 55,286,696 of the 2017 Amazon Warrant Shares had vested and the 2017 Amazon Warrant was exercised with respect to 34,917,912 shares of the Company's common stock. 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, 2024, 2023 and 2022 was \$0.4 million, \$0.4 million and \$0.4 million, respectively.

Walmart Transaction Agreement

On July 20, 2017, the Company and Walmart entered into a Transaction Agreement (the "Walmart Transaction Agreement"), pursuant to which the Company agreed to issue to Walmart a warrant (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 was 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 the fair value of the awards and recorded as a charge against revenue. The second tranche of 29,098,260 Walmart Warrant Shares vested in four installments of 7,274,565 Walmart Warrant Shares each time Walmart 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 exercise price for the first and second tranches of Walmart Warrant Shares was \$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 the Walmart Warrant Shares is \$6.28 per share, which was determined pursuant to the terms of the Walmart Warrant as an amount equal to 90% of the 30-day volume weighted average share price of the Company's common stock as of October 30, 2023, the final vesting date of the second tranche of the Walmart Warrant Shares. 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. As of December 31, 2024, the balance of the contract asset related to the Walmart Warrant was \$2.6 million.

As of December 31, 2024 and 2023, 40,010,108 and 34,917,912 of the Walmart Warrant Shares had vested, respectively, and the Walmart Warrant was exercised with respect to 13,094,217 shares of the Company's common stock. 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, 2024, 2023 and 2022 was \$19.6 million, \$5.9 million, and \$7.1 million, respectively.

Operating and Finance Lease Liabilities

As of December 31, 2024, 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 six 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 23, "Commitments and Contingencies", for a description of cash held as security associated with the leases.

The Company has finance leases associated with its property and equipment in Latham, New York and at fueling customer locations.

Future minimum lease payments under operating and finance leases (with initial or remaining lease terms in excess of one year) as of December 31, 2024 were as follows (in thousands):

	Op	Finance Operating Lease Liability Liability		Lease	Total Lease Liabilities	
2025	\$	100,882	\$	14,786	\$	115,668
2026		88,834		11,926		100,760
2027		74,819		8,250		83,069
2028		52,459		1,940		54,399
2029		28,877		400		29,277
2030 and thereafter		128,374		2,898		131,272
Total future minimum payments		474,245		40,200		514,445
Less imputed interest		(160,847)		(4,620)		(165,467)
Total	\$	313,398	\$	35,580	\$	348,978

Rental expense for all operating leases was \$98.1 million, \$95.0 million, and \$67.6 million for the years ended December 31, 2024, 2023 and 2022, respectively.

As of December 31, 2024 and 2023, security deposits associated with sale/leaseback transactions were \$7.4 million and \$7.4 million, respectively, and were included in other assets in the consolidated balance sheets.

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

	_	ear ended nber 31, 2024	_	ear ended mber 31, 2023		ear ended mber 31, 2022
Cash payments - operating cash flows (in thousands)	\$	99,934	\$	91,637	\$	63,214
Weighted average remaining lease term (years)		7.06		5.76		6.52
Weighted average discount rate		11.1 %	Ó	11.3 %	o o	11.2 %

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 statements of operations), and were \$7.2 million, \$7.5 million and \$6.2 million for the years ended December 31, 2024, 2023 and 2022, respectively.

As of December 31, 2024 and 2023, the right of use assets associated with finance leases, net was \$51.8 million and \$57.3 million, respectively. The accumulated depreciation for these right of use assets was \$12.9 million and \$9.0 million at December 31, 2024 and 2023, respectively.

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

	Year ended Year ended ember 31, 2024 December 31, 2023		Year ended December 31, 2022		
Cash payments - operating cash flows (in thousands)	\$ 2,740	\$	3,059	\$	2,447
Cash payments - financing cash flows (in thousands)	\$ 9,341	\$	8,638	\$	6,586
Weighted average remaining lease term (years)	3.09		3.87		3.92
Weighted average discount rate	6.8 %	ó	6.8 %	,)	6.7 %

The Company had outstanding obligations to Wells Fargo under several Master Lease Agreements totaling \$132.2 million and \$171.3 million for the years ended December 31, 2024 and 2023, respectively. These outstanding obligations are included in the operating lease liabilities and finance obligations financial statement line items on the consolidated balance sheets.

Finance Obligations

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, 2024 was \$276.7 million, \$77.5 million and \$199.2 million of which was classified as short-term and long-term, respectively, on the accompanying consolidated balance sheets. The outstanding balance of this obligation at December 31, 2023 was \$350.8 million, \$74.0 million and \$276.8 million of which was classified as short-term and long-term, respectively, on the accompanying consolidated balance sheets. The amount is amortized using the effective interest method. Interest expense recorded related to finance obligations for the years ended December 31, 2024, 2023 and 2022 was \$36.7 million, \$39.6 million and \$29.7 million, respectively.

During the year ended December 31, 2024, the Company entered into failed sale/leaseback transactions that were accounted for as financing obligations, resulting in \$60.3 million of additional finance obligations. No gain or loss was recorded as a result of these transactions. The outstanding balance of the Company's finance obligations related to sale/leaseback transactions as of December 31, 2024 was \$70.7 million, \$5.6 million and \$65.1 million of which was classified as short-term and long-term, respectively on the accompanying consolidated balance sheets with a residual value of \$37.7 million. The outstanding balance of the Company's finance obligations related to sale/leaseback transactions as of December 31, 2023 was \$17.6 million, \$10.0 million and \$7.6 million of which was classified as short-term and long-term, respectively on the accompanying consolidated balance sheets with no residual value.

Future minimum payments under finance obligations notes above as of December 31, 2024 were as follows (in thousands):

	 Sale of Future Revenue - Debt		Sale/Leaseback Financings		Total Finance Obligations
2025	\$ 104,547	\$	18,525	\$	123,072
2026	87,824		14,698		102,522
2027	71,253		14,698		85,951
2028	51,188		14,484		65,672
2029	24,082		12,153		36,235
2030 and thereafter	 1,421		11,742		13,163
Total future minimum payments	340,315		86,300		426,615
Less imputed interest	(63,606)		(53,297)		(116,903)
Total	\$ 276,709	\$	33,003	\$	309,712

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

	_	ear ended mber 31, 2024	_	ear ended mber 31, 2023		Year ended ember 31, 2022
Cash payments (in thousands)	\$	117,988	\$	96,781	\$	72,377
Weighted average remaining term (years)		4.10		4.49		4.84
Weighted average discount rate		12.3 %	6	11.3 %)	11.1 %

The fair value of the Company's total finance obligations approximated their carrying value for the years ended December 31, 2024 and December 31, 2023

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. As we continue to work to improve quality and reliability, 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 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.

The following table shows the roll forward of balances in the accrual for loss contracts (in thousands):

	ear ended aber 31, 2024	Year ended December 31, 2023		
Beginning balance	\$ 137,853	\$	81,066	
Provision for loss accrual	45,226		85,375	
Releases to service cost of sales	(51,578)		(29,713)	
Increase to loss accrual related to customer warrants	3,313		971	
Foreign currency translation adjustment	(458)		154	
Ending balance	\$ 134,356	\$	137,853	

The Company decreased the provision for loss accrual primarily due to improved pricing structure and reduction of new GenDrive deployments in 2024, partially offset by an increase in the provision related to stationary systems.

Product Warranty Reserve

On a quarterly basis, we evaluate our product warranty reserve. The Company applies a failure rate based on product type on a contract-by-contract basis to determine its product warranty reserve liability. The following table shows the roll forward of product warranty reserve (in thousands):

	ended er 31, 2024	Year ended December 31, 2023		
Beginning balance	\$ 8,044	\$	2,954	
Additional provision due to new issuances	8,864		7,599	
Adjustments to existing warranty provisions	(4,801)		(2,509)	
Releases due to cash receipts	 			
Ending balance	\$ 12,107	\$	8,044	

The product warranty reserve balance increased during the year ended December 31, 2024 primarily due to an increase in electrolyzer systems for which revenue was recognized.

Restricted Cash

In connection with certain of the above noted sale/leaseback agreements, cash of \$476.2 million and \$573.5 million, respectively, was required to be restricted as security as of December 31, 2024 and 2023, which will be released over the lease term. As of December 31, 2024 and 2023, the Company also had certain letters of credit backed by security deposits totaling \$276.4 million and \$370.7 million, respectively, of which \$242.7 million and \$340.0 million are security for the above noted sale/leaseback agreements, respectively, and \$33.7 million and \$30.7 million are customs related letters of credit, respectively.

As of December 31, 2024 and 2023, the Company had \$73.7 million and \$76.8 million, respectively, held in escrow related to the construction of certain hydrogen production plants.

The Company also had \$1.2 million of consideration held by our paying agent in connection with the Joule acquisition reported as restricted cash as of December 31, 2024 and 2023, with a corresponding accrued liability on the Company's consolidated balance sheets. The Company also had \$0.1 million and \$0.2 million of consideration held by our paying agent in connection with the CIS acquisition reported as restricted cash as of December 31, 2024 and 2023, respectively, with a corresponding accrued liability on the Company's consolidated balance sheets. Additionally, the Company had \$7.4 million and \$11.7 million in restricted cash as collateral resulting from the Frames acquisition as of December 31, 2024 and 2023, respectively.

Guarantee

On May 30, 2023, our joint venture, HyVia, entered into a government grant agreement with Bpifrance. As part of the agreement, our wholly-owned subsidiary, Plug Power France, was required to issue a guarantee to Bpifrance in the amount of €20.0 million through the end of January 2027. Plug Power France is liable to the extent of the guarantee for sums due to Bpifrance from HyVia under the agreement based on the difference between the total amount paid by Bpifrance and the final amount certified by HyVia and Bpifrance. As part of the agreement, there are certain milestones that HyVia is required to meet, and the nonperformance of these milestones or termination of this agreement could result in this guarantee being called upon. As of December 31, 2024, no payments related to this guarantee have been made. The Company and Plug Power France recorded a liability of \$2.0 million related to this guarantee based on the Company's estimate of the guarantee being called upon.

Commitments to Equity Method Investments

The Company's capital commitments related to its equity method investments as of December 31, 2024 includes \$4.6 million to be made during 2025.

Unconditional Purchase Obligations

The Company has entered into certain off-balance sheet commitments that require the future purchase of goods or services ("unconditional purchase obligations"). The Company's unconditional purchase obligations primarily consist of supplier arrangements, take or pay contracts and service agreements. For certain vendors, the Company's unconditional obligation to purchase a minimum quantity of raw materials at an agreed upon price is fixed and determinable; while certain other raw material costs will vary due to product forecasting and future economic conditions.

Future payments under non-cancelable unconditional purchase obligations with a remaining term in excess of one year as of December 31, 2024, were as follows (in thousands):

2025	\$ 40,914
2025 2026	50,782
2027	64,852
2028	_
2029	_
2030 and thereafter	_
Total	156,548

Restructuring

In February 2024, in a strategic move to enhance our financial performance and ensure long-term value creation in a competitive market, we approved the 2024 Restructuring Plan, a comprehensive initiative that encompassed a broad range of measures, including operational consolidation, strategic workforce adjustments, and various other cost-saving actions. These measures were aimed at increasing efficiency, improving scalability, and maintaining our leadership position in the renewable energy industry. We began executing the 2024 Restructuring Plan in February 2024 and it was effectively completed during the fourth quarter of 2024.

The determination of when we accrue for involuntary termination benefits under restructuring plans depends on whether the termination benefits are provided under an ongoing benefit arrangement or under a one-time benefit arrangement. We account for involuntary termination benefits that are provided pursuant to one-time benefit arrangements in accordance with ASC 420, Exit or Disposal Cost Obligations ("ASC 420") whereas involuntary termination benefits that are part of an ongoing written or substantive plan are accounted for in accordance with ASC 712, Nonretirement Postemployment Benefits ("ASC 712"). We accrue a liability for termination benefits under ASC 420 in the period in which the plan is communicated to the employees and the plan is not expected to change significantly. For ongoing benefit arrangements, inclusive of statutory requirements, we accrue a liability for termination benefits under ASC 712 when the existing situation or set of circumstances indicates that an obligation has been incurred, it is probable the benefits will be paid, and the amount can be reasonably estimated. The restructuring charges that have been incurred but not yet paid are recorded in accrued expenses and other current liabilities in our consolidated balance sheets, as they are expected to be paid within the next twelve months.

During the year ended December 31, 2024, we incurred \$8.1 million in restructuring costs recorded as severance expenses of \$6.9 million and other restructuring costs of \$1.2 million in the restructuring financial statement line item in the consolidated statements of operations. Severance expense recorded during the year ended December 31, 2024 in accordance with ASC 420 was a result of the separation of full-time employees associated with the 2024 Restructuring Plan. As of December 31, 2024, \$0.1 million of accrued severance-related costs were included in accrued expenses in our consolidated balance sheets and are expected to be paid during 2025. For the year ended December 31, 2024, other restructuring costs were represented by (1) \$0.2 million of legal and professional services costs, and (2) \$1.0 million of other one-time employee termination benefits. As of December 31, 2024, \$28 thousand of accrued other restructuring costs were included in accrued expenses in our consolidated balance sheets and are expected to be paid during 2025.

Tax Credits

Section 45V Credit for Production of Clean Hydrogen

Beginning in the second quarter of 2024, the Company determined that it qualifies for the PTC under Section 45V as part of the IRA resulting from operation of the Company's hydrogen production plant located in Georgia. The PTC

is available for qualified clean hydrogen produced and sold during the 10-year period beginning on the date the qualified clean hydrogen production facility was originally placed in service. The Company has chosen elective pay, also referred to as direct pay, for the 2024 taxable year. This election makes the PTC refundable, as the Company can receive the full value of the credit from the Internal Revenue Service. This election will apply to the 2024 taxable year and the four subsequent taxable years unless revoked. During the remaining five years of the 10-year period to receive the PTC, the Company can elect to transfer all or a portion of the PTC to a third party buyer in exchange for cash. The Company has analogized the accounting of the PTC to accounting for government grants due to the ability to receive payment for the credit regardless of whether the Company has an income tax liability.

As the PTC is a refundable credit (i.e., a credit with a direct-pay option available), the PTC is outside the scope of ASC 740, *Income Taxes* ("ASC 740"). Therefore, the Company has analogized the accounting of the PTC to accounting for government grants due to the ability to receive payment for the credit regardless of whether the Company has an income tax liability. Under a government grant model, once it is reasonably assured that the entity will comply with the conditions of the grant, the grant money should be recognized on a systematic basis over the period in which the entity recognizes the related expenses or losses for which the grant money is intended to compensate. The Company recognizes grants once it is probable that both of the following conditions will be met: (1) the Company is eligible to receive the grant and (2) the Company is able to comply with the relevant conditions of the grant.

With respect to the PTC, based on our current production, the Company expects to qualify for the full \$3 per kg credit. For the year ended December 31, 2024 the Company recognized PTC of \$4.0 million as a reduction to the fuel delivered to customers and related equipment costs of revenue financial statement line item in the consolidated statements of operations and \$4.5 million as an increase to the other assets financial statement line item in the consolidated balance sheets.

Section 48 Credit for Qualified Fuel Cell Properties of Energy Storage Technologies

As of December 31, 2024 the Company determined that it qualifies for the Section 48 ITC for Qualified Fuel Cell Properties of Energy Storage Technologies related to its hydrogen storage and liquefaction assets at its Georgia hydrogen plant. A base rate credit of 6% is available to qualified energy storage property in the year that it is placed in-service, with availability of increased credit rates if the property qualifies. The Company determined that it qualified for a rate credit of 30%. As the ITC is considered a transferable tax credit, the Company is accounting for it as a grant related to assets. Therefore, the ITC is recognized as a reduction to the Georgia hydrogen production plant's cost-basis, recognized within the "property, plant, and equipment, net" financial statement line item of the consolidated balance sheets, which will reduce future depreciation over the next 30 years. The amount of the ITC, which is recognized in the prepaid expenses, tax credits, and other current assets financial statement line item of the consolidated balance sheets as of December 31, 2024, was \$31.3 million.

Critical Accounting 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 but not limited to those related to revenue recognition, valuation of inventories and intangible assets, valuation of long-lived assets, valuation of equity method investments, accrual for service loss contracts, operating and finance leases, allowance for credit losses, unbilled revenue, common stock warrants, stock-based compensation, 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.

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. Furthermore, the Company enters into contracts related to the sales of cryogenic equipment, liquefaction systems and engineered equipment.

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 the 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 19, "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.

- (a) Sales of equipment, related infrastructure and other
 - (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. The Company uses an adjusted market assessment approach to determine the standalone selling price of electrolyzer systems. 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) Sales of cryogenic equipment and other

Revenue from sales of cryogenic equipment represents sales of liquefaction system and other cryogenic equipment such as trailers and mobile storage equipment for the distribution of liquefied hydrogen, oxygen, argon, nitrogen and other cryogenic gases.

The Company uses a variety of information sources in determining standalone selling prices for liquefaction systems and cryogenic equipment. Liquefaction systems are typically sold on a standalone basis and the standalone selling price is the contractual price with the customer. The Company uses an adjusted market assessment approach to determine the standalone selling price of liquefaction systems when sold with 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 obligation requires judgment, including periodic assessment of pricing approaches and available observable evidence in the market. Revenue on liquefaction systems is generally recognized over time. Control 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 of progress to determine the amount of revenue to recognize during each reporting period based on the costs incurred to satisfy the performance obligation.

Revenue on cryogenic equipment 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.

Payments received from customers are recorded within deferred revenue and customer deposits in the consolidated balance sheets until control is transferred. The related costs 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.

(b) 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 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. 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" above.

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.

(c) Power purchase agreements

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 simultaneously receive and consume 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 power purchase agreements 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 842, Leases ("ASC 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.
- (d) Fuel delivered to customers and related equipment

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 at our hydrogen production plants. 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.

(e) Other revenue

Other revenue includes payments received for technical services that include engineering services, program management services, procurement services and operations, testing and validation services with HyVia. The scope of these services includes mutually agreed upon services as were requested from time to time by HyVia. Other revenue also includes sales of electrolyzer engineering and design services. The scope of these services includes establishing and defining project technical requirements, standards and guidelines as well as assistance in scoping and scheduling of large-scale electrolyzer solutions.

Impairment

During the fourth quarter of 2024, in connection with the Company's preparation of its consolidated financial statements, the Company recognized that sales and margin projections were likely not to be met for 2024. Additionally, during the fourth quarter of 2024, in connection with the Company's preparation of its consolidated financial statements, the Company performed strategic planning, analyzing its various product lines, and it was determined at that time to update the future sales projections and related cash flow projections for certain of those product lines. As a result, there was a reduction in the cash flow projections during the fourth quarter of 2024 to several of the Company's asset groups indicating that the carrying values of their long-lived assets (including property, plant, and equipment, equipment related to power purchase agreements and fuel delivered to customers, and right of use assets related to operating leases) and finite-lived intangible assets may not be recoverable.

Asset groups are the unit of account for a long-lived asset or assets to be held and used which represent the lowest level for which identifiable cash flows are largely independent of other groups of assets and liabilities. The decrease in cash flow projections for several asset groups was largely attributed to several factors, including the Company failing to meet 2024 sales and margin projections as well as decreased future cash flow projections across certain product lines including stationary, liquefiers and fuel cells for mobility projects related to HyVia. On December 10, 2024, HyVia announced that it entered into legal recovery proceedings recorded by the Commercial Court of Versailles. Additionally, the Company paused certain hydrogen production plant projects during the fourth quarter of 2024. This pause, as well as the decrease in cash flow projections, was primarily due to weakening demand in the global hydrogen market. As a result, the Company tested the recoverability of its long-lived assets and finite-lived intangibles by comparing the carrying values against undiscounted future cash flow projections and determined that an impairment existed.

During the fourth quarter of 2024, a significant amount of property, plant, and equipment were written down to their estimated fair values. The fair value for revenue generating assets was determined using a market approach utilizing prices for similar assets in active markets. The fair value for property, plant, and equipment was determined using a market approach, where available, and where not available, a cost approach. The fair value for equipment related to power purchase agreements and fuel delivered to customers was determined using a discounted cash flow income approach considering estimated market rent. The fair value for right of use assets related to operating leases was determined using a discounted cash flow income approach considering estimated market rent. The fair values for finite-lived intangible assets were determined using the income approach.

The Company recognized impairment charges of \$949.3 million during the year ended December 31, 2024 compared to \$269.5 million during the year ended December 31, 2023. The increase in impairment was primarily due to impairment charges of \$902.2 million resulting from the ASC 360 impairment analysis performed during the fourth quarter of 2024. Of the \$902.2 million, \$675.5 million was related to property, plant and equipment, \$1.6 million was related to equipment related to power purchase agreements and fuel delivered to customers, \$145.4 million was related to right of use assets related to operating leases, and \$79.7 million was related to finite-lived intangible assets. Additionally, during the fourth quarter of 2024, the Company recorded a \$38.3 million impairment charge related to contract assets and other current assets in which the Company determined it would be unable to collect the consideration from a customer contract, impairment charges of \$0.3 million related to property, plant and equipment as well as other impairment charges of \$0.1 million. Other impairment charges recorded during the year ended December 31, 2024 was \$8.4 million, of which \$3.0 million related to non-marketable equity securities and \$5.4 million related to property, plant and equipment.

The impairment charge of \$269.5 million for the year ended December 31, 2023 was primarily related to the impairment of goodwill of \$249.5 million as well as \$2.4 million related to contract assets, \$9.7 million related to other current assets, \$3.1 million related to property, plant and equipment, \$4.6 million was related to right of use assets related to operating leases and \$0.2 million related to equipment related to power purchase agreements and fuel delivered to customers.

To the extent there are further changes in market conditions or the performance of the Company's long-lived assets, there is a possibility that the Company could incur additional impairment charges in the future.

Inventory Valuation

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 damaged, excess stock or obsolescence is based upon a detailed review of inventory, past history, and expected usage. The Company's estimate of the reserves utilizes certain inputs and involves judgment. The Company evaluates excess and obsolescence and lower of cost or net realizable value inventory reserves on a quarterly basis and, as necessary, reserves inventory based upon a variety of factors, including historical usage, forecasted usage and sales, product obsolescence, anticipated selling price, and anticipated cost to complete to determine product margin and other factors. We review all contracts related to product lines with projected negative margins that are arranged to be sold at a loss in the future as the basis for a lower of cost or net realizable value adjustment.

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 19, "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.

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 statements of operations.

Recent Accounting Pronouncements

Recently Adopted Accounting Pronouncements

In November 2023, ASU 2023-07, *Improvements to Reportable Segment Disclosures*, was issued to improve reportable segment disclosure requirements, primarily through enhanced disclosures about significant segment expenses. The purpose of the amendments is to enable investors to better understand an entity's overall performance and assess potential future cash flows. This update was effective for fiscal years beginning after December 15, 2023. Refer to Note 24, "Segment and Geographic Area Reporting".

Recently Issued and Not Yet Adopted Accounting Pronouncements

In November 2024, ASU 2024-04, *Debt with Conversion and Other Options*, was issued to improve the relevance and consistency in application of the induced conversion guidance in Subtopic 470-20. This standard is effective for annual periods beginning after December 15, 2025, including interim periods within those fiscal years. The Company has not yet adopted ASU 2024-04 and is still evaluating the impact of the adoption on its consolidated financial statements.

In November 2024, ASU 2024-03, *Disaggregation of Income Statement Expenses*, was issued which requires disclosure in the notes to the financial statements of specified information about certain costs and expenses. This standard is effective for annual periods beginning after December 15, 2026, and interim periods within annual periods beginning after December 15, 2027, on a prospective basis, with early adoption and retrospective application permitted. The Company has not yet adopted ASU 2024-03 and is still evaluating the impact of the adoption on its consolidated financial statements.

In December 2023, ASU 2023-09, *Improvements to Income Tax Disclosures*, was issued to require public business entities to annually disclose specific categories in the rate reconciliation and provide additional information for reconciling items that meet a quantitative threshold. Additionally, annual disclosures on income taxes paid will be required

to be further disaggregated by federal, state, and foreign taxes. This update is effective for annual periods beginning after December 15, 2024. The Company has not yet adopted ASU 2023-09 and is still evaluating the impact of the adoption on its consolidated financial statements.

Climate Disclosures

In March 2024, the SEC issued Release No. 33-11275, *The Enhancement and Standardization of Climate-Related Disclosures for Investors*, which includes final rules that enhance the transparency of climate-related disclosures and require companies to disclose material climate-related risks; activities to mitigate or adapt to such risks; information about the board of directors' oversight of climate-related risks and management's role in managing material climate-related risks; and information on any climate-related targets or goals that are material to the registrant's business, results of operations, or financial condition. Companies are also required to disclose the financial statement effects of severe weather events and other natural conditions in the notes to the financial statements, and certain large companies are also required to disclose Scope 1 and Scope 2 greenhouse gas emissions, when material. As a large accelerated filer, most disclosure requirements are effective for the Company beginning with the year ending December 31, 2025. The SEC has been the subject of various lawsuits since adopting these rules. As a result of ongoing litigation, the SEC issued an order in April 2024 to stay the effectiveness of the rules while judicial review is pending. We are continuing to monitor developments associated with these rules and are currently evaluating the impact of these rules on our consolidated financial statements and related disclosures.

Item 7A. Quantitative and Qualitative Disclosures about Market Risk

Credit Risk

As of December 31, 2024 and 2023, 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. 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 3.75% Notes Capped Call purchased in May 2020 related to the issuance of the 3.75% Convertible Senior Notes. Additionally, the Company purchased a common stock forward in March 2018, which 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, as well as Frames, our wholly-owned subsidiary 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 two joint ventures (1) an investment in AccionaPlug S.L., a joint venture with Acciona, and (2) an investment in SK Plug Hyverse, a joint venture with SK Innovation, as well as an investment in the Clean H2 Infra Fund. Our exposure to foreign currency can give rise to foreign exchange risk resulting from our equity method investments in Acciona and Clean H2 Infra Fund, which all operate in Europe, and SK Plug Hyverse, which operates in Asia. Our AccionaPlug S.L., SK Plug Hyverse and Clean H2 Infra Fund exposure presently is immaterial as commercial activities are in early stages.

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 increase our gross margin or reduce our 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 our operating expenses.

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-65 of this Annual Report on Form 10-K for the year ended December 31, 2024 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 is 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, 2024. Based on such evaluation, our Chief Executive Officer and Chief Financial Officer have concluded that as of December 31, 2024, our disclosure controls and procedures were effective. We continue to review and document our disclosure controls and procedures, including our internal controls and procedures for financial reporting, and may from time to time make changes aimed at enhancing their effectiveness and to ensure that our systems evolve with our business.

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). 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 reporting as of December 31, 2024, based on the criteria set forth by COSO in Internal Control -- Integrated Framework (2013). Based on this evaluation, management determined that we maintained effective internal control over financial reporting.

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, has audited the effectiveness of the Company's internal control over financial reporting as of December 13, 2024. Deloitte & Touche LLP's report is included in this Annual Report on Form 10-K.

Changes in Internal Control Over Financial Reporting

There were no changes to the internal control over financial reporting of the Company identified in connection with the Company's evaluation referred to above that occurred during the fourth quarter ended December 31, 2024 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 shareholders 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 and subsidiaries (the "Company") as of December 31, 2024, 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, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2024, 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, 2024, of the Company and our report dated March 3, 2025, expressed an unqualified opinion on those financial statements and financial statement schedule.

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.

/s/ Deloitte & Touche LLP

Rochester, New York

March 3, 2025

Item 9B. Other Information

(a) On February 27, 2025, the Compensation Committee approved an executive compensation program wherein eligible executives may elect to receive payment of their base salary and/or bonus in shares of the Company's common stock beginning on March 6, 2025, the next open trading window. The shares of common stock will be issued under the Company's 2021 Stock Option and Incentive Plan, as amended. The executive compensation program permits eligible executives to receive 25%, 50% or 75% of their 2025 salary (including any increases that may occur during the year) in shares of the Company's common stock. On the last trading day of each calendar month, each participant will receive the number of shares of the Company's common stock determined by dividing (i) 1/12th of his or her enrolled salary by (ii) the trailing 30-day closing average of the Company's common stock, rounded up to the nearest whole share. Once an election is made, it runs for the full year 2025 and is irrevocable. Participation levels may not be changed after the close of the enrollment period. There is no vesting period for the shares.

(b) On February 27, 2025, the Company approved the 2025 Restructuring Plan. The 2025 Restructuring Plan includes initiatives to reduce the Company's workforce, realign the Company's manufacturing footprint and streamline the organization to enhance operational efficiency and improve overall liquidity. The expected annual savings from the 2025 Restructuring Plan are expected to be significant and will begin to be realized beginning in the second half of 2025. We expect the 2025 Restructuring Plan to be completed by 2026. At the time of the filing of this Annual Report on Form 10-K, the Company is unable in good faith to make a determination of an estimate of the total amount or range of amounts expected to be incurred by the Company in connection with the 2025 Restructuring Plan. The Company will provide additional disclosure in a Current Report on Form 8-K once it makes a determination of an estimate or range of estimates.

(c) Director and Officer Trading Arrangements

On December 4, 2024 Gregory Kenausis, a member of our Board of Directors, terminated an existing stock trading plan established pursuant to Rule 10b5-1 of the Exchange Act (the "Prior Plan"), which was intended to satisfy the affirmative defense conditions of Rule 10b5-1(c), and was originally adopted on September 7, 2023 to provide for the sale of up to 80,000 shares of the Company's common stock in the aggregate until the earlier of February 7, 2025 or the date all shares were sold thereunder. Also on December 4, 2024, following the termination of the Prior Plan, Mr. Kenausis adopted a new stock trading plan established pursuant to Rule 10b5-1 of the Exchange Act (the "New Plan"), which is intended to satisfy the affirmative defense conditions of Rule 10b5-1(c), and which provides for the sale of up to 120,000 shares of the Company's common stock on the later of (i) March 5, 2025 or (ii) the earlier of : (a) the third business day following the disclosure of the Company's financial results in a Form 10-Q or Form 10-K for the completed fiscal quarter in which this New Plan is adopted; or (b) April 4, 2025. The New Plan was adopted during an open insider trading window. There were no other Rule 10b5-1 trading arrangements or non-Rule 10b5-1 trading arrangements adopted, terminated or modified by the Company's directors or executive officers during the quarter ended December 31, 2024.

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 to be filed with Securities and Exchange Commission not later than 120 days after the close of the Company's fiscal year ended December 31, 2024, to the extent not set forth below.

The Company has an insider trading policy governing the purchase, sale and other dispositions of the Company's securities that applies to all of the Company's directors, officers, employees and other covered persons. The Company believes that its insider trading policy is reasonably designed to promote compliance with insider trading laws, rules and regulations, and listing standards applicable to the Company. It is also the policy of the Company to comply with all insider trading laws and regulations. A copy of the Company's insider trading policy is filed as *Exhibit 19.1* to this Annual Report on Form 10-K.

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, 2024.

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, 2024.

Securities Authorized for Issuance Under Equity Compensation Plans

The following table gives information, as of December 31, 2024, 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"):

	Number of shares to be issued upon exercise of outstanding options, warrants and rights	Weighted average exercise price of outstanding options, warrants and rights	Number of shares remaining for future issuance under equity compensation plans (excluding shares reflected in column (a))
Plan Category	(a)	(b) (1)	(c)
Equity compensation plans approved by			
security holders	38,373,482 (2) \$	8.66	4,347,212 (3)
Equity compensation plans not approved by			
security holders	316,666 (4) \$	5.68	<u> </u>
Total	38,690,148		4,347,212

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

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, 2024.

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, 2024.

⁽²⁾ Represents 32,771,582 shares underlying outstanding options issued under the 2021 Stock Option Plan and 5,601,900 shares underlying outstanding options issued under the 2011 Stock Option Plan. The amounts reported in the table do not include 6,750,372 shares of restricted stock granted under the 2021 Stock Option Plan.

⁽³⁾ Includes shares available for future issuance under the 2021 Stock Option Plan.

⁽⁴⁾ Included in equity compensation plans not approved by stockholders are shares granted to new employees for key positions within the Company. No specific shares have been allocated for this purpose, but rather equity awards are approved by the Company's Board of Directors in specific circumstances.

PART IV

Item 15. Exhibits and Financial Statement Schedules

15(a)(1) Financial Statements

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

15(a)(2) Financial Statement Schedules

The following financial statement schedule is included in this Annual Report on Form 10-K (in thousands):

Schedule II - Valuation and Qualifying Accounts

	_(Column B	Column C - Additions		Column D	Column E	
Description	_	alance at ginning of Period	Charged to Costs and Expenses	Charged to Other accounts - Describe	Deductions - Describe	Balance at End of Period	
Year ended December 31, 2024							
Inventory reserves	\$	85,210	171,981		(98,296)(1)	\$ 158,895	
Allowance for credit losses	\$	8,798	30,779	_	(1,865)(2)	\$ 37,712	
Year ended December 31, 2023							
Inventory reserves	\$	5,442	93,742	_	(13,974)(1)	\$ 85,210	
Allowance for credit losses	\$	43	8,848	_	(93)(2)	\$ 8,798	
Year ended December 31, 2022							
Inventory reserves	\$	3,523	2,005	_	(86)	\$ 5,442	
Allowance for credit losses	\$	39	43	_	(39)(2)	\$ 43	

⁽¹⁾ Write offs of inventory reserves

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 filed on March 16, 2009 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 filed on March 16, 2009 and incorporated by reference herein)

⁽²⁾ Write offs of allowance for credit losses

Exhibit No.	Description
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 filed on March 10, 2017 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	Seventh Amended and Restated Bylaws of Plug Power Inc. (filed as Exhibit 3.1 to Plug Power Inc.'s Current Report on Form 8-K filed on April 26, 2024 and incorporated by reference herein)
4.1	Specimen certificate for shares of common stock, \$.01 par value, of Plug Power Inc. (filed as Exhibit 4.1 to Plug Power Inc.'s Registration Statement on Form S-1 (File Number 333-86089) and incorporated by reference herein)
4.2	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)
4.3	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)
4.4	Warrant to Purchase Common Stock, issued April 4, 2017, between Plug Power Inc. and Amazon.com NV Investment Holdings LLC (filed as Exhibit 4.1 to Plug Power Inc.'s Current Report on Form 8-K filed on April 5, 2017 and incorporated by reference herein)
4.5	Warrant to Purchase Common Stock, issued July 20, 2017, between Plug Power Inc. and Wal-Mart Stores, Inc. (filed as Exhibit 4.1 to Plug Power Inc.'s Current Report on Form 8-K filed on July 21, 2017 and incorporated by reference herein)
4.6	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)
4.7	Description of the Registrant's securities registered under Section 12 of the Securities Exchange Act of 1934 (Incorporated by reference to Exhibit 4.7 to Form 10-K of the Company filed February 29, 2024)

Exhibit No.	Description
4.8	Indenture, dated as of March 20, 2024, between Plug Power Inc. and Wilmington Trust, National Association, as Trustee (filed as Exhibit 4.1 to Plug Power Inc.'s Current Report on Form 8-K filed on March 26, 2024 and incorporated by reference herein)
4.9	Form of 7.00% Convertible Senior Notes due 2026 (filed as Exhibit 4.1 to Plug Power Inc.'s Current Report on Form 8-K filed on March 26, 2024 and incorporated by reference herein)
4.10*	Convertible Debenture dated November 12, 2024
10.1#	2023 Employee Stock Purchase Plan (filed as Appendix B to Plug Power Inc.'s Schedule 14A Proxy Statement filed on May 16, 2023 and incorporated by reference herein)
10.2#	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)
10.3#	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)
10.4#	Employment Agreement, dated as of April 7, 2008, between Andrew Marsh and Plug Power Inc. (filed as Exhibit 10.1 to Plug Power Inc.'s Current Report on Form 8-K filed on April 7, 2008 and incorporated by reference herein)
10.5#	Executive Employment Agreement, dated as of May 5, 2008, between Gerard L. Conway, Jr. and Plug Power Inc. (filed as Exhibit 10.1 to Plug Power Inc.'s Quarterly Report on Form 10-Q filed on August 7, 2008 and incorporated by reference herein)
10.6*#	Executive Employment Agreement, dated as of September 10, 2018, between Timothy Cortes and Plug Power Inc.
10.7*#	Executive Employment Agreement, dated as of November 19, 2024, between Paul B. Middleton and Plug Power Inc.
10.8#	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)
10.9#	Relocation and Retention Agreement, dated as of May 10, 2024, 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 August 8, 2024 and incorporated by reference herein)
10.10#	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)
10.11#	Executive Employment Agreement, dated as of July 29, 2024, between Dean Fullerton and Plug Power Inc. (filed as Exhibit 10.2 to Plug Power Inc.'s Current Report on Form 8-K filed on August 2, 2024 and incorporated by reference herein)
10.12*#	Form of Non-Qualified Stock Option Agreement for Company Employees
10.13*#	Form of Non-Qualified Stock Option Agreement for Non-Employee Directors
10.14*#	Form of Non-Qualified Stock Option Agreement for Non-U.S. Optionees

Exhibit No. 10.15*#	Description Form of Restricted Stock Award Agreement for Company Employees
10.16*#	Form of Restricted Stock Award Agreement for Non-Employee Directors
10.17*#	Form of Restricted Stock Unit Award Agreement for Non-U.S. Grantees
10.18#	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)
10.19#	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)
10.20	Purchase and Sale Agreement dated as of January 24, 2013, between Plug Power Inc. and 968 Albany Shaker Road Associates, LLC (filed as Exhibit 10.1 to Plug Power Inc.'s Current Report on Form 8-K filed on April 1, 2013 and incorporated by reference herein)
10.21	Amendment to Purchase and Sale Agreement dated as of March 13, 2013 between Plug Power Inc. and 968 Albany Shaker Road Associates, LLC (filed as Exhibit 10.2 to Plug Power Inc.'s Current Report on Form 8-K filed on April 1, 2013 and incorporated by reference herein)
10.22	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)
10.23	Transaction Agreement, dated as of April 4, 2017, between Plug Power Inc. and Amazon.com, Inc. (filed as Exhibit 10.1 to Plug Power Inc.'s Current Report on Form 8-K filed on April 5, 2017 and incorporated by reference herein)
10.24	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	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)
10.27	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)
10.28	Forward Stock Purchase Transaction Confirmation, dated as of March 22, 2018, between Plug Power Inc. and Morgan Stanley & Co, LLC (filed as Exhibit 10.2 to Plug Power Inc.'s Current Report on Form 8-K filed on March 28, 2018 and incorporated by reference herein)
10.29	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)

Exhibit No.	Description
10.30	At Market Issuance Sales Agreement, dated January 17, 2024, by and between Plug Power Inc. and B. Riley Securities, Inc. (filed as Exhibit 1.1 to Plug Power Inc.'s Current Report on Form 8-K filed on January 17, 2024 and incorporated by reference herein)
10.31	Amendment No.1 to At Market Issuance Sales Agreement, dated February 23, 2024, by and between Plug Power Inc. and B. Riley Securities, Inc. (filed as Exhibit 1.1 to Plug Power Inc.'s Current Report on Form 8-K filed on February 23, 2024 and incorporated by reference herein)
10.32	Amendment No. 2 to At Market Issuance Sales Agreement, dated November 7, 2024, by and between Plug Power Inc. and B. Riley Securities, Inc. (filed as Exhibit 1.1 to Plug Power Inc.'s Current Report on Form 8-K filed on November 8, 2024 and incorporated by reference herein)
10.33	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)
10.34	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)
10.35#	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)
10.36#	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)
10.37#	Amendment No. 2 to the 2021 Stock Option and Incentive Plan (filed as Appendix A to Plug Power Inc.'s Schedule 14A Proxy Statement filed on May 16, 2023 and incorporated by reference herein)
10.38	Debenture Purchase Agreement, dated November 11, 2024, by and between Plug Power Inc. and YA II PN, Ltd. (filed as Exhibit 10.2 to Plug Power Inc.'s Quarterly Report on Form 10-Q filed November 12, 2024 and incorporated by reference herein)
19.1*	Plug Power Inc. Insider Trading Policy
21.1*	List of Subsidiaries of Plug Power Inc.
23.1*	Consent of Deloitte & Touche LLP
24.1*	Power of Attorney (incorporated by reference to the signature page of this Annual Report on Form 10-K)
31.1*	Rule 13a-14(a)/15d-14(a) Certification of Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
31.2*	Rule 13a-14(a)/15d-14(a) Certification of Chief Financial Officer pursuant to Section 302 of the Sarbanes Oxley Act of 2002
32.1**	Section 1350 Certification of Chief Executive Officer pursuant to Section 906 of the Sarbanes Oxley Act of 2002
32.2**	Section 1350 Certification of Chief Financial Officer pursuant to Section 906 of the Sarbanes Oxley Act of 2002

Exhibit No.	Description
97	Compensation Recovery Policy, adopted as of November 30, 2023 (filed as Exhibit 97 to Plug Power Inc.'s
	Annual Report on Form 10-K filed on February 29, 2024 and incorporated by reference herein)
101.INS*	Inline XBRL Instance Document
101.SCH*	Inline XBRL Taxonomy Extension Schema Document
101 01 4	II' VDDIT - F. ' Cl. I.' I'II D
101.CAL*	Inline XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF*	Inline XBRL Taxonomy Extension Definition Linkbase Document
1011221	anno 12212 I mienem, Emiliano E vinnica Emiliano E evinnica
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.

Item 16. Form 10-K Summary

Not applicable.

[#] 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.

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 3, 2025

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.

/s/ ANDREW MARSH Andrew Marsh	President, Chief Executive Officer and Director (Principal Executive Officer)	March 3, 2025
/s/ PAUL B. MIDDLETON Paul B. Middleton	Chief Financial Officer (Principal Financial Officer)	March 3, 2025
/s/ MARTIN D. HULL Martin D. Hull	Controller & Chief Accounting Officer (Principal Accounting Officer)	March 3, 2025
/s/ GEORGE C. MCNAMEE George C. McNamee	Director	March 3, 2025
/s/ MARK J. BONNEY Mark J. Bonney	Director	March 3, 2025
/s/ MAUREEN O. HELMER Maureen O. Helmer	Director	March 3, 2025
/s/ PATRICK JOGGERST Patrick Joggerst	Director	March 3, 2025
/s/ GREGORY L. KENAUSIS Gregory L. Kenausis	Director	March 3, 2025
/s/ KAVITA MAHTANI Kavita Mahtani	Director	March 3, 2025
/s/ COLIN ANGLE Colin Angle	Director	March 3, 2025
/s/ GARY K. WILLIS Gary K. Willis	Director	March 3, 2025

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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 sheets of Plug Power Inc. and subsidiaries (the "Company") as of December 31, 2024 and 2023, the related consolidated statements of operations, comprehensive loss, stockholders' equity, and cash flows, for each of the three years in the period ended December 31, 2024, and the related notes and the schedule listed in the Index at Item 15 (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2024 and 2023 and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2024, 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, 2024, 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 3, 2025 expressed an unqualified 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.

Inventories - Reserves -- Refer to Notes 2 and 7 to the financial statements

Critical Audit Matter Description

The Company establishes inventory reserves against excess, obsolete and damaged goods, and records its inventory at the lower of cost or net realizable value. As part of these processes, the Company reviews all contracts related to product lines with projected negative margins that are expected to be sold at a loss in the future, which serves as the basis for the Company's lower of cost or net realizable value adjustment. The Company's estimate of the reserves utilizes certain inputs and involves judgment. The Company evaluates these reserves on a quarterly basis and, as necessary, writes down the valuation of inventory based upon historical usage, forecasted usage and sales, product obsolescence, anticipated selling price, anticipated cost to complete to determine product margin, and other factors. Reserves are included in inventory, net, on the balance sheet. The reserve for excess and obsolete inventory and lower of cost or net realizable value as of December 31, 2024, was \$158.9 million.

We identified the inventory reserves as a critical audit matter because of judgments made by management in determining the reserves. This required a high degree of auditor judgment, and an increased extent of effort, when performing audit procedures to evaluate the reasonableness of the Company's reserves.

How the Critical Audit Matter Was Addressed in the Audit

Our audit procedures related to inventory reserves included the following, among others:

- We tested the effectiveness of internal controls associated with management's process for recording inventory reserves.
- We evaluated the reasonableness of the Company's inventory reserve policies, considering historical experience and the underlying assumptions.
- We tested the calculation of the excess and obsolescence reserve pursuant to the Company's policy, on a sample basis, including the
 completeness and accuracy of the data used in the calculation.

- We tested the calculation of the lower of cost or net realizable value reserve pursuant to the Company's policy, on a sample basis, including testing the completeness and accuracy of the data used in the calculation.
- We performed procedures to evaluate management's forecast by tracing demand for our selection to a finished good part and sales
 orders for that part.
- We made inquiries of senior financial and operating management to determine whether any strategic, regulatory, or operational
 changes in the business were consistent with the projections of future demand and future costs that were utilized as the basis for the
 reserve recorded.
- We considered the existence of contradictory evidence based on consideration of internal communications to management and the board of directors, Company press releases, and analysts' reports, as well as any changes within the business.

Impairment — Refer to Notes 2 and 8 of the financial statements

Critical Audit Matter Description

Long-lived assets, such as property, equipment, right of use assets, 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 and length of time 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. Impairment charges resulting from the Company's impairment analysis performed during the fourth quarter of 2024 were \$902.2 million.

We identified the determination of fair value related to the measurement of impairment of long-lived assets as a critical audit matter due to the significant judgments made by management to determine the fair values of the impaired assets. This required a high degree of auditor judgment, subjectivity, and an increased extent of effort, including the need to involve our valuation specialists when performing audit procedures over the impairment of the long-lived assets.

How the Critical Audit Matter Was Addressed in the Audit

Our audit procedures related to managements judgements underlying the impairment charge included the following, among others:

- We tested the effectiveness of internal controls associated with management's process for recording the impairment charge.
- With the assistance of our fair value valuation specialists:
 - Evaluated the reasonableness of the valuation methodologies for the asset groups;
 - o Evaluated the reasonableness of the key inputs and assumptions utilized in the personal property fair value analysis;
 - Evaluated the reasonableness of key inputs and assumptions utilized in the intangible assets fair value analysis including: discount rate, royalty rate, and technology obsolescence factors;
 - Evaluated the reasonableness of key inputs and assumptions utilized in the right of use asset fair value analysis including: market rent, market rent growth, and discount rate
- Tested the underlying data which served as the basis for the determination of fair value to test that the inputs were accurate and complete.
- Evaluated the Company's disclosures related to impairment to assess their conformity with the applicable accounting standards.

/s/ Deloitte & Touche LLP

Rochester, NY

March 3, 2025

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

PLUG POWER INC. AND SUBSIDIARIES

CONSOLIDATED BALANCE SHEETS

As of December 31, 2024 and 2023

(In thousands, except share and per share amounts)

		2024		2023
Assets				
Current assets:				
Cash and cash equivalents	\$	205,693	\$	135,033
Restricted cash		198,008		216,552
Accounts receivable, net of allowance of \$37,712 as of December 31, 2024 and \$8,798 as of December 31, 2023		157,244		243,811
Inventory, net		682,642		961,253
Contract assets		94,052		126,248
Prepaid expenses, tax credits, and other current assets		139,845		104,068
Total current assets		1,477,484		1,786,965
Restricted cash		637,008		817,559
Property, plant, and equipment, net		866,329		1,436,177
Right of use assets related to finance leases, net		51,822		57,281
Right of use assets related to operating leases, net		218,081		399,969
Equipment related to power purchase agreements and fuel delivered to customers, net		144,072		111,261
Contract assets		23,963		29,741
Intangible assets, net		84,660		188,886
Investments in non-consolidated entities and non-marketable equity securities		85,494		63,783
Other assets		13,933		11,116
Total assets ^(A)	\$	3,602,846	\$	4,902,738
Link Widers and Cheatal address Franches				
Liabilities and Stockholders' Equity Current liabilities:				
Accounts payable	\$	180,966	\$	257.828
Accrued expenses	J	103,145	Ф	200,544
Deferred revenue and other contract liabilities		144.093		200,344
Operating lease liabilities		71,250		63,691
Finance lease liabilities		12.802		9,441
Finance rease nationals Finance obligations		83,129		84,031
Current portion of convertible senior notes, net		58,273		64,031
Current portion of convertible semon holes, her Current portion of long-term debt		946		2,716
				,
Contingent consideration, loss accrual for service contracts, and other current liabilities		93,885		142,410
Total current liabilities		748,489		964,800
Deferred revenue and other contract liabilities		58,532		84,163
Operating lease liabilities		242,148		292,002
Finance lease liabilities		22,778		36,133
Finance obligations		264,318		284,363
Convertible senior notes, net (\$173,150 measured at fair value as of December 31, 2024 and \$0 measured at fair value as of December 31, 2023)		321,060		195,264
Long-term debt		1,932		1,209
Contingent consideration, loss accrual for service contracts, and other liabilities		135,833		146,679
Total liabilities ^(A)		1,795,090		2,004,613
Stockholders' equity:				
Common stock, \$.01 par value per share; 1,500,000,000 shares authorized; Issued (including shares in treasury):				
934,126,897 as of December 31, 2024 and 625,305,025 as of December 31, 2023		9,342		6,254
Additional paid-in capital		8,430,537		7,494,685
Accumulated other comprehensive loss		(2,502)		(6,802)
Accumulated deficit		(6,594,445)		(4,489,744)
Less common stock in treasury: 20,230,043 as of December 31, 2024 and 19,169,366 as of December 31, 2023		(108,795)		(106,268)
Total Plug Power Inc. stockholders' equity		1,734,137		2,898,125
Non-controlling interest ^(A)		73,619		
Total stockholders' equity		1,807,756		2,898,125
Total liabilities and stockholders' equity	\$	3,602,846	\$	4,902,738
Total habilities and stockholders equity	3	3,002,640	Þ	4,902,738

(A) Includes balances associated with a consolidated variable interest entity ("VIE"), including amounts reflected in "total assets" that can only be used to settle obligations of the VIE of \$148,605 and \$0 as of December 31, 2024 and 2023, respectively, as well as liabilities of the VIE reflected within "total liabilities" for which creditors do not have recourse to the general credit of Plug Power Inc. of \$1,367 and \$0 as of December 31, 2024 and 2023, respectively. Refer to Note 28, "Variable Interest Entities", for additional information.

PLUG POWER INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF OPERATIONS

For the years ended December 31, 2024, 2023 and 2022

(In thousands, except share and per share amounts)

		2024		2023		2022
Net revenue:						
Sales of equipment, related infrastructure and other	\$	390,335	\$	711,433	\$	558,932
Services performed on fuel cell systems and related infrastructure		52,169		39,093		35,280
Power purchase agreements		77,842		63,731		47,183
Fuel delivered to customers and related equipment		97,882		66,246		57,196
Other	_	10,586	_	10,837	_	2,849
Net revenue		628,814		891,340		701,440
Cost of revenue:						4.50.0.
Sales of equipment, related infrastructure and other		696,087		765,575		468,057
Services performed on fuel cell systems and related infrastructure		57,766		75,412		59,365
Provision for loss contracts related to service		48,539		86,346		26,801
Power purchase agreements		216,947		218,936		144,696
Fuel delivered to customers and related equipment		228,827		246,318		194,255
Other	_	5,535		6,544	_	2,622
Total cost of revenue		1,253,701		1,399,131		895,796
Gross loss		(624,887)		(507,791)		(194,356)
Operating expenses:						
Research and development		77,226		113,745		99,579
Selling, general and administrative		376,110		422,469		363,929
Restructuring		8,153		_		_
Impairment		949,315		269,494		5,218
Change in fair value of contingent consideration		(15,847)		30,024		16,468
Total operating expenses		1,394,957		835,732		485,194
Operating loss		(2,019,844)		(1,343,523)		(679,550)
Interest income		30,717		55,829		37,259
Interest expense		(46,622)		(45,201)		(39,037)
Other expense, net		(19,963)		(131)		(1,135)
Realized loss on investments, net		(-,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		(12,806)		(1,395)
Change in fair value of equity securities		_		11,421		(18,159)
Loss on extinguishment of convertible senior notes and debt		(16,278)				(986)
Change in fair value of convertible senior note		(3,424)		_		_
Loss on equity method investments		(32,177)		(41,786)		(20,166)
Loss before income taxes	\$	(2,107,591)	\$	(1,376,197)	\$	(723,169)
Income tax benefit/(expense)	_	2,686		7,364		(839)
Net loss	<u>\$</u>	(2,104,905)	\$	(1,368,833)	\$	(724,008)
Net loss attributable to non-controlling interest		(204)				_
Net loss attributable to Plug Power Inc.	<u>\$</u>	(2,104,701)	\$	(1,368,833)	\$	(724,008)
Net loss per share attributable to Plug Power Inc.: Basic and diluted	\$	(2.68)	\$	(2.30)	\$	(1.25)
Dusic and analog	<u> </u>	(2.00)	Ψ	(2.30)	Ψ	(1.23)
Weighted average number of common stock outstanding		785,024,373		595,468,419		579,716,708

PLUG POWER INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS

For the years ended December 31, 2024, 2023 and 2022

(In thousands)

	2024	2023	2022
Net loss	\$ (2,104,905)	\$ (1,368,833)	\$ (724,008)
Other comprehensive income/(loss):			
Foreign currency translation gain/(loss)	4,300	(3,470)	(4,468)
Change in net unrealized gain/(loss) on available-for-sale securities		9,866	(20,004)
Amounts reclassified from accumulated other comprehensive			
income/(loss):			
Other-than-temporary impairment of available-for-sale securities		12,806	
Comprehensive loss, net of tax	\$ (2,100,605)	\$ (1,349,631)	\$ (748,480)
Less: comprehensive loss attributable to non-controlling interest	(204)		_
Total comprehensive loss attributable to Plug Power Inc.	\$ (2,100,401)	\$ (1,349,631)	\$ (748,480)

PLUG POWER INC. AND SUBSIDIARIES CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY

For the years ended December 31, 2024, 2023 and 2022 $\,$

(In thousands, except share amounts)

				,	Accumulated				Total		,
	Comm	Common Stock es Amount	g ä Ü	Additional Paid-in Capital	Other Comprehensive Gain/(Loss)	Treasu	Treasury Stock es Amount	Accumulated Deficit	Plug Power Stockholders' Equity	Non-controlling Interests	Total Stockholders' Equity
December 31, 2021	594,729,610	\$ 5,947	S	7,070,710	\$ (1,532)	17,074,710	\$ (72,526)	\$ (2,396,903)	\$ 4,605,696	-	\$ 4,605,696
Net loss				1				(724,008)	(724,008)		(724,008)
Other comprehensive loss	1				(24,472)	1	I	1	(24,472)	I	(24,472)
Treasury stock acquired from employees upon exercise of stock options and vesting of restricted stock and restricted											
stock unit awards	I	I		I	I	1,001,417	(23,735)	I	(23,735)	I	(23,735)
Stock-based compensation	584,545	9		179,621	I	I	I	I	179,627	I	179,627
Stock option exercises and issuance of common stock upon grant/vesting of restricted stock and restricted stock											
unit awards	5,905,883	59		2,242	I	I	I	I	2,301	I	2,301
Exercise of warrants	6,793,479	89		(89)	1	1	1	1	1	1	
Common stock issued for acquisitions	408,268	4		6,103	1		1		6,107		6,107
Provision for common stock warrants				38,698				1	38,698	1	38,698
December 31, 2022	608,421,785	\$ 6,084	s	7,297,306	(26,004)	18,076,127	\$ (96,261)	\$ (3,120,911)	\$ 4,060,214	s	\$ 4,060,214
Net loss		1		1	1	1	1	(1,368,833)	(1,368,833)	1	(1,368,833)
Other comprehensive income					19,202	1	1		19,202		19,202
Stock-based compensation	1,548,608	15		162,893	I	I	I	1	162,908	I	162,908
Stock option exercises and issuance of common stock upon orant/vesting of restricted stock and restricted stock											
unit awards	5,103,159	53		1,560					1,613	l	1,613
Treasury stock acquired from employees upon exercise of											
stock options and vesting of restricted stock and restricted											
stock unit awards	1	I		1	I	1,093,239	(10,007)	I	(10,007)	I	(10,007)
Exercise of warrants	9,304,431	93		(63)	I	I	I	I	I	I	I
Earnouts from acquisitions paid in stock	927,042	6		7,991	1	1	1	1	8,000	1	8,000
Provision for common stock warrants				25,028					25,028		25,028
December 31, 2023	625,305,025	\$ 6,254	8	7,494,685	(6,802)	19,169,366	\$ (106,268)	\$ (4,489,744)	\$ 2,898,125	- s	\$ 2,898,125
Net loss	1	I		ļ				(2,104,701)	(2,104,701)	(204)	(2,104,905)
Other comprehensive income		I		1	4,300	1	1	1	4,300	I	4,300
Stock-based compensation	4,547,148	45		82,158	I	I	I	I	82,203	I	82,203
Public offerings, common stock, net of issuance costs	298,575,378	2,986		854,886	I	I	I	I	857,872	I	857,872
Stock option exercises and issuance of common stock upon grant/vesting of restricted stock and restricted stock unit anade.	3 073 718	7		123					251		151
Tressury stock acquired from employees upon exercise of stock options and vesting of restricted stock and restricted											
stock unit awards		1			1	1,060,677	(2,527)	1	(2,527)	1	(2,527)
Earnouts from acquisitions paid in stock	2,625,628	26		18,215	I	1	1	1	18,241	I	18,241
Provision for common stock warrants				33,635	I	1	I	1	33,635		33,635
Additional paid-in capital due to contributions to consolidated VIE	I			(53,165)		I			(53.165)	53.165	I
Contributions by non-controlling interest	1	1		,	1	1	1	1		20,658	20,658
December 31, 2024	934,126,897	\$ 9,342	s	8,430,537	\$ (2,502)	20,230,043	\$ (108,795)	\$ (6,594,445)	\$ 1,734,137	73,619	\$ 1,807,756

See notes to consolidated financial statements.

PLUG POWER INC. AND SUBSIDIARIES CONSOLIDATED STATEMENTS OF CASH FLOWS

For the years ended December 31, 2024, 2023 and 2022 $\,$

(In thousands)

	 2024		2023		2022
Operating activities Net loss	\$ (2,104,905)	\$	(1,368,833)	S	(724,008
Adjustments to reconcile net loss to net cash used in operating activities:	()		()))		(, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Depreciation of long-lived assets	61,115		51,986		30,402
Amortization of intangible assets	23,441		19,097		21,195
Lower of cost or net realizable value inventory adjustments and provision for excess and obsolete inventory	171,980 82,203		93,742 162,908		1,957 179,627
Stock-based compensation Loss on extinguishment of convertible senior notes and debt	15,666		102,908		986
Provision for losses on accounts receivable	28,914		8,407		
Amortization of (premium)/discount of debt issuance costs on convertible senior notes and long-term debt	(2,826)		2,213		2,710
Provision for common stock warrants	38,984		11,209		12,683
Deferred income tax (benefit)/expense	(3,155)		(8,534)		170
Impairment	949,315		269,494		5,218
(Recovery)/loss on service contracts	(3,039)		56,633		(8,645
Loss on sale of long-lived assets	2,885		30,024		268 16,468
Fair value adjustment to contingent consideration Net realized loss on investments	(15,847)		12,806		1,395
(Accretion)/amortization of premium on available-for-sale securities	_		(6,610)		990
Lease origination costs	(3,508)		(9,600)		(8,815
Change in fair value for equity securities	_		(11,421)		18,159
Change in fair value of convertible senior note	3,424				_
Loss on equity method investments	32,177		41,786		20,166
Change in fair value of derivative financial instruments	1,665		_		_
Changes in operating assets and liabilities that provide/(use) cash:	## C#2		(122 50)		(20.02
Accounts receivable	57,653		(122,768)		(30,920
Inventory Contract accepts	129,291		(408,631)		(365,666
Contract assets Prepaid expenses and other assets	(2,493) (31,175)		(40,258) 32,549		(39,515 (92,521
Accounts payable, accrued expenses, and other liabilities	(59,464)		21,722		88,458
Payments of contingent consideration	(9,924)		(2,895)		00,430
Payments of operating lease liability, net	(5,343)		(2,0,5)		_
Deferred revenue and other contract liabilities	(85,677)		58,404		40,615
Net cash used in operating activities	(728,643)		(1,106,570)		(828,623
Investing activities					
Purchases of property, plant and equipment	(287,098)		(665,208)		(436,610
Proceeds from sales of long-lived assets	500		1,104		(27.25)
Purchases of equipment related to power purchase agreements and equipment related to fuel delivered to customers	(47,150)		(30,918)		(27,263 (838,622
Purchases of available-for-sale securities Proceeds from sales of available-for-sale securities	_		345,264		475,676
Proceeds from maturities of available-for-sale securities			1,006,161		247,879
Purchases of equity securities	_				(5,000
Proceeds from sales of equity securities	_		144,250		(-,
Net cash paid for acquisitions	_				(56,906
Cash paid for non-consolidated entities and non-marketable equity securities	 (68,616)		(72,601)		(38,524
Net cash (used in)/provided by investing activities	 (402,364)		728,052		(679,370
Financing activities					
Payments of contingent consideration	(19,901)		(10,105)		(2,667
Proceeds from public and private offerings, net of transaction costs	857,872		(,)		(=,
Payments of tax withholding on behalf of employees for net stock settlement of stock-based compensation	(2,527)		(10,007)		(23,735
Proceeds from non-controlling interest	10,163		` <u>'</u>		
Proceeds from exercise of stock options	154		1,613		2,301
Proceeds from convertible debentures	190,000		_		_
Cash penalty from early settlement of convertible senior notes	612		_		_
Principal payment on convertible debentures	(22,500)		(6.010)		(121 200
Principal payments on long-term debt Proceeds from finance obligations	(3,526)		(6,010)		(121,389
Principal repayments of finance obligations and finance leases	60,287 (87,464)		104,251 (73,625)		122,886 (54,853
Net cash provided by/(used in) financing activities	 983,170		6,117		(77,457
Effect of exchange rate changes on cash	 19,402		(7,799)	_	2,600
Increase/(decrease) in cash and cash equivalents	70,660		(555,597)		(1,790,639
(Decrease)/increase in restricted cash	(199,095)		175,397		207,789
Cash, cash equivalents, and restricted cash beginning of period	1,169,144		1,549,344		3,132,194
Cash, cash equivalents, and restricted cash end of period	\$ 1,040,709	\$	1,169,144	\$	1,549,344
Supplemental disclosure of cash flow information Cash paid for interest, net of capitalized interest of \$8.3 million, \$8.1 million and \$13.1 million, respectively	\$ 44,962	\$	41,811	\$	35,520
		\$	0.005	•	2
Summary of non-cash activity			8,908	\$	25,650
Recognition of right of use asset - finance leases	\$ 163	Þ			
Recognition of right of use asset - finance leases Recognition of right of use asset - operating leases	\$ 163 21,267	J	90,795		
Recognition of right of use asset - finance leases Recognition of right of use asset - operating leases Net tangible assets (liabilities) acquired (assumed) in a business combination	\$	Þ	90,795		5,342
Recognition of right of use asset - finance leases Recognition of right of use asset - operating leases Net tangible assets (liabilities) acquired (assumed) in a business combination Common stock issued for acquisitions	\$ 21,267 — —	\$			5,342
Recognition of right of use asset - finance leases Recognition of right of use asset - operating leases Net tangible assets (liabilities) acquired (assumed) in a business combination Common stock issued for acquisitions Contributions of property, plant, and equipment from consolidated VIE	\$	Ş	90,795		5,342 6,107
Recognition of right of use asset - finance leases Recognition of right of use asset - operating leases Net tangible assets (liabilities) acquired (assumed) in a business combination Common stock issued for acquisitions Contributions of property, plant, and equipment from consolidated VIE Intangible assets acquired in a business combination	\$ 21,267 — — — — — — — — — — —	\$	90,795 — — — —		5,342 6,107 — 73,952
Recognition of right of use asset - finance leases Recognition of right of use asset - operating leases Net tangible assets (liabilities) acquired (assumed) in a business combination Common stock issued for acquisitions Contributions of property, plant, and equipment from consolidated VIE	\$ 21,267 — —	3	90,795		5,342 6,107 — 73,952
Recognition of right of use asset - finance leases Recognition of right of use asset - operating leases Net tangible assets (liabilities) acquired (assumed) in a business combination Common stock issued for acquisitions Contributions of property, plant, and equipment from consolidated VIE Intangible assets acquired in a business combination Net transfers between inventory and long-lived assets	\$ 21,267 ————————————————————————————————————	3	90,795 — — — — — 728		178,222 5,342 6,107 73,952 1,619

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 clean 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) production of hydrogen; and (c) 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. 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 product and service portfolio includes:

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

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; our GenSure High Power Fuel Cell Platform supports large scale stationary power and data center markets.

Progen: Progen is our fuel cell stack and engine technology currently used globally in mobility and stationary fuel cell systems. This includes Plug's membrane electrode assembly ("MEA"), a critical component of the fuel cell stack used in zero-emission fuel cell systems.

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.

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.

Electrolyzers: The design and implementation of 5MW 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.

Liquid Hydrogen: Liquid hydrogen provides an efficient fuel alternative to fossil-based energy. We produce liquid hydrogen through our electrolyzer systems and liquefaction systems. Liquid hydrogen supply will be used by customers in material handling operations, fuel cell electric vehicle fleets, and stationary power applications.

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, with the United Kingdom also taking steps in this direction, 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 our electrolyzer business.

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, named "Hidrogenii" in the third quarter of 2022. The Company has determined Hidrogenii to be a variable interest entity ("VIE"), and the Company is considered to be the VIE's primary beneficiary. 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. The construction of the 15-ton-per-day hydrogen production plant in St. Gabriel, Louisiana progressed as planned in 2024 and is on schedule, as previously announced, for operations in the first quarter of 2025 once the final commissions phase is complete. 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 was formed to manufacture and sell fuel cell powered electric light commercial vehicles ("FCE-LCVs") 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. In December 2024, HyVia entered receivership proceedings after facing challenges in the slow evolution of hydrogen mobility ecosystems in Europe. During 2024, the Company recorded losses for HyVia which resulted in the investments in non-consolidated entities and non-marketable equity securities financial statement line item of the consolidated balance sheets related to HyVia to be \$0 as of December 31, 2024. For additional information see Note 4, "Investments".

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

Plug Power Inc. entered into a joint venture with SK Innovation named SK Plug Hyverse, which was initially funded in the first quarter of 2022. SK Plug Hyverse seeks to accelerate the use of hydrogen as an alternative energy source in selected Asian markets. This collaboration aims to provide hydrogen fuel cell systems, hydrogen fueling stations, electrolyzers and clean hydrogen to the Korean and other selected Asian markets. The partnership will leverage SK Innovation's leadership in chemicals, petroleum and energy as well as Plug's leading hydrogen platform. This joint venture is owned 49% by Plug Power Inc. and 51% by SK Innovation.

Plug Power Inc. has also invested in a hydrogen infrastructure and growth equity fund, Clean H2 Infra Fund, a special limited partnership registered in France, since the fourth quarter of 2021. The Clean H2 Infra Fund is focused on clean hydrogen infrastructure through financing projects in the production, storage and distribution of clean hydrogen. As of December 31, 2024 the Company's ownership percentage in the Clean H2 Infra Fund was approximately 5%.

Liquidity and Capital Resources

The Company has continued to experience negative cash flows from operations and net losses. The Company incurred net losses of approximately \$2.1 billion, \$1.4 billion and \$724.0 million for the years ended December 31, 2024, 2023 and 2022, respectively. The Company's working capital was \$729.0 million at December 31, 2024, which included unrestricted cash and cash equivalents of \$205.7 million and current restricted cash of \$198.0 million.

The future use of our available liquidity will be based upon the ongoing review of the funding needs of our businesses, the optimal allocation of our resources, and the timing of cash flow generation. To the extent that we desire to access alternative sources of capital, market conditions could adversely impact our ability to do so at that time and at terms favorable to the Company.

The Company has an "at-the-market" equity offering program with B. Riley pursuant to which the Company may, from time to time, offer and sell through or to B. Riley, as sales agent or principal, shares of the Company's common stock, having an aggregate gross sales price of up to \$1.0 billion. The Company has the right at its sole discretion to direct B. Riley to act on a principal basis and purchase directly from the Company up to \$11.0 million of shares of its common stock on any trading day if the Company's market capitalization is more than \$1.0 billion (or up to \$10.0 million if the Company's market capitalization is less than \$1.0 billion) and up to \$55.0 million of shares in any calendar week if the Company's market capitalization is more than \$1.0 billion (or up to \$30.0 million if the Company's market capitalization is less than \$1.0 billion). On February 23, 2024 and November 7, 2024, the Company and B. Riley amended the at-the-market equity program to increase the aggregate offering price of shares of common stock available for issuance under the program to \$1.0 billion. The amended program will terminate upon the earliest of (a) December 31, 2025 with respect to principal transactions and January 17, 2026 with respect to agency transactions, (b) the sale of all shares of common stock under the program or (c) termination of the sales agreement. During the year ended December 31, 2024, the Company issued 219,835,221 shares of its common stock at a weighted-average sales price of \$3.08 per share for net proceeds of \$666.9 million under the ATM agreement.

On July 22, 2024, the Company sold 78,740,157 shares of its common stock at a public offering price of \$2.54 per share for net proceeds of \$191.0 million after deducting the underwriting discount and related offering expenses.

On November 11, 2024, the Company entered into a Debenture Purchase Agreement (the "Debenture Purchase Agreement") with YA II PN, Ltd., an investment fund managed by Yorkville Advisors Global, LP ("Yorkville"), pursuant to which the Company issued to Yorkville an unsecured convertible debenture in aggregate principal amount of \$200.0 million in exchange for the payment of \$190.0 million. For more information, see Note 17, "Convertible Senior Notes".

In addition, on February 10, 2025, the Company entered into a Standby Equity Purchase Agreement with Yorkville (the "SEPA"), pursuant to which the Company has the right, at its option, to sell to Yorkville up to \$1.0 billion in the aggregate gross sales of its common stock, subject to certain limitations and conditions set forth therein. The Company has the right, but not the obligation, from time to time at its sole discretion to direct Yorkville to purchase directly from the Company up to \$10.0 million shares of its common stock on any trading day.

On March 3, 2025, the Company announced their 2025 restructuring plan (the "2025 Restructuring Plan"). The 2025 Restructuring Plan includes initiatives to reduce our workforce, realign the Company's manufacturing footprint and streamline the organization to enhance operational efficiency and improve overall liquidity. The expected annual savings from the 2025 Restructuring Plan are expected to be significant and will begin to be realized beginning in the second half of 2025.

The Company believes that its working capital, cash position and restricted cash to be released over the next 12 months, together with its right to direct B. Riley to purchase shares from the Company under the "at-the-market" equity offering program and its right to direct Yorkville to purchase shares from the Company under the SEPA, will be sufficient to fund its on-going operations for a period of at least 12 months subsequent to the issuance of the accompanying consolidated financial statements.

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, and our investment in Clean H2 Infra Fund 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 and Clean H2 Infra Fund.

We consolidate all entities we control under either the voting interest model, which generally applies when we hold a majority of the voting interest of an entity, or the variable interest model, which applies to arrangements for which we are the primary beneficiary of a VIE. For consolidated subsidiaries in which our ownership is less than 100%, the outside shareholders' interests are reflected as non-controlling interest on our consolidated financial statements. We are considered the primary beneficiary of a VIE when we have both the power to direct the activities that most significantly impact the economic performance of the VIE and the obligation to absorb losses or the right to receive benefits that could potentially be significant to the VIE. We are the primary beneficiary of Hidrogenii and consolidate the joint venture within our single reportable segment. For additional information, refer to Note 28, "Variable Interest Entities".

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 but not limited to those related to revenue recognition, valuation of inventories and intangible assets, valuation of long-lived assets, valuation of equity method investments, accrual for service loss contracts, operating and finance leases, allowance for credit losses, unbilled revenue, common stock warrants, stock-based compensation, 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.

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 Power Purchase Agreement ("PPA"). The Company also enters into contracts that contain electrolyzer stacks, systems, maintenance, and other support services. Furthermore, the Company enters into contracts related to the sales of cryogenic equipment, liquefaction systems and engineered equipment.

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 the 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 19, "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.

- (a) Sales of equipment, related infrastructure and other
 - (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. The Company uses an adjusted market assessment approach to determine the standalone selling price of electrolyzer systems. 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) Sales of cryogenic equipment and other

Revenue from sales of cryogenic equipment represents sales of liquefaction system and other cryogenic equipment such as trailers and mobile storage equipment for the distribution of liquefied hydrogen, oxygen, argon, nitrogen and other cryogenic gases.

The Company uses a variety of information sources in determining standalone selling prices for liquefaction systems and cryogenic equipment. Liquefaction systems are typically sold on a standalone basis and the standalone selling price is the contractual price with the customer. The Company uses an adjusted market assessment approach to determine the standalone selling price of liquefaction systems when sold with 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 obligation requires judgment, including periodic assessment of pricing approaches and available observable evidence in the market. Revenue on liquefaction systems is generally recognized over time. Control 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 of progress to determine the amount of revenue to recognize during each reporting period based on the costs incurred to satisfy the performance obligation.

Revenue on cryogenic equipment 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.

Payments received from customers are recorded within deferred revenue and customer deposits in the consolidated balance sheets until control is transferred. The related costs 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.

(b) 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 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. 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.

(c) Power purchase agreements

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 simultaneously receive and consume 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. There were no such transactions during the year ended December 31, 2024.

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 power purchase agreements 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):

Accounting Standards Codification ("ASC") 842, Leases ("ASC 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.
- (d) Fuel delivered to customers and related equipment

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 at our hydrogen production plants. Depending on the terms of the contract, revenue is recognized either upon delivery or upon consumption. The stand-alone selling price is not estimated because it is sold separately and therefore directly observable.

The Company produces hydrogen fuel onsite or purchases hydrogen fuel from suppliers and sells it to its customers. Revenue and cost of revenue related to this fuel is included in the respective fuel delivered to customers and related equipment lines on the consolidated statements of operations.

(e) Other revenue

Other revenue includes payments received for technical services that include engineering services, program management services, procurement services and operations, testing and validation services with HyVia. The scope of these services includes mutually agreed upon services as were requested from time to time by HyVia. Other revenue also includes sales of electrolyzer engineering and design services. The scope of these services includes establishing and defining project technical requirements, standards and guidelines as well as assistance in scoping and scheduling of large-scale electrolyzer solutions.

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 related to unrecognized tax benefits on the interest expense line and other expense, net line, respectively, 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 loss 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 other expense, net in the consolidated statements of operations.

Research and Development

Activities that qualify as research and development under ASC 730, Research and Development ("ASC 730") include: (i) laboratory research aimed at discovery of new knowledge; (ii) searching for applications of new research findings or other knowledge; (iii) conceptual formulation and design of possible product or process alternatives; (iv) testing in search for or evaluation of product or process alternatives; (v) modification of the formulation or design of a product or process: (vi) design, construction, and testing of preproduction prototypes and models; (vii) design of tools, jigs, molds, and dies involving new technology; (viii) design, construction, and operation of a pilot plant that is not of a scale economically feasible to the entity for commercial production; (ix) engineering activity required to advance the design of a product to the point that it meets specific functional and economic requirements and is ready for manufacture; and (x) design and development of tools used to facilitate research and development or components of a product or process that are undergoing research and development activities. 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 21, "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.

The Company has also issued market condition stock options awards that include a market condition. The grant date fair value of market condition stock options awards 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 income tax return are recorded in the income statement.

Tax Credits

Beginning in the second quarter of 2024, the Company determined that it qualifies for the clean hydrogen production tax credit ("PTC") under Section 45V as part of the Inflation Reduction Act of 2022 ("IRA") resulting from operation of the Company's hydrogen production plant located in Georgia. The PTC is available for qualified clean hydrogen produced and sold during the 10-year period beginning on the date the qualified clean hydrogen production facility was originally placed in service. The Company has chosen elective pay, also referred to as direct pay, for the 2024 taxable year. This election makes the PTC refundable, as the Company can receive the full value of the credit from the Internal Revenue Service. This election will apply to the 2024 taxable year and the four subsequent taxable years unless revoked. During the remaining five years of the 10-year period to receive the PTC, the Company can elect to transfer all or a portion of the PTC to a third party buyer in exchange for cash. The Company has analogized the accounting of the PTC to accounting for government grants due to the ability to receive payment for the credit regardless of whether the Company has an income tax liability. For more information, see Note 27, "Government Assistance".

As of December 31, 2024 the Company determined that it qualifies for the Section 48 Investment Tax Credit ("ITC") for Qualified Fuel Cell Properties of Energy Storage Technologies related to its hydrogen storage and liquefaction assets at its Georgia hydrogen plant. A base rate credit of 6% is available to qualified energy storage property in the year that it is placed in-service, with availability of increased credit rates if the property qualifies. The Company determined that it qualified for a rate credit of 30%. As the ITC is considered a transferable tax credit, the Company is accounting for it as a grant related to assets. Therefore, the ITC is recognized as a reduction to the Georgia hydrogen production plant's cost-basis, recognized within the "property, plant, and equipment, net" financial statement line item of the consolidated balance sheets, which will reduce future depreciation over the next 30 years. For more information, see Note 27, "Government Assistance".

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. 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. 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.

As of December 31, 2024 and 2023, the Company has no investments classified as available-for-sale.

Accounts Receivable

Accounts receivable are stated at the amount billed or billable to customers and are ordinarily due between 30 and 120 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 credit losses and related receivable are reduced when the amount is deemed uncollectible.

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 damaged, excess stock or obsolescence is based upon a detailed review of inventory, past history, and expected usage. The Company's estimate of the reserves utilizes certain inputs and involves judgment. The Company

evaluates excess and obsolescence and lower of cost or net realizable value inventory reserves on a quarterly basis and, as necessary, reserves inventory based upon a variety of factors, including historical usage, forecasted usage and sales, product obsolescence, anticipated selling price, and anticipated cost to complete to determine product margin and other factors. We review all contracts related to product lines with projected negative margins that are arranged to be sold at a loss in the future as the basis for a lower of cost or net realizable value adjustment.

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 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:

Building and leasehold improvements	10-30 years
Machinery and equipment	2-30 years
Software	1-5 years
Hydrogen production plants	30 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. 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.

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., SK Plug Hyverse and Clean H2 Infra Fund, as equity method investments.

Included in "Investments in non-consolidated entities and non-marketable equity securities" on the consolidated balance sheets 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.

The Company sells goods and services to related parties, including its equity method investees. Transactions involving services do not result in assets remaining on the books of the investee, and therefore no profit elimination is recorded in accordance with ASC Subtopic 323-10-35, *Equity Method and Joint Ventures – Subsequent Measurement*. Transactions involving inventory are evaluated if the assets remain on the books of the investee or if they have been sold to a third party – intra-entity profits are eliminated for transactions in which assets remain on the books of the investee.

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 ASC 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 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 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 to estimate the discount rate for each 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.

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.

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.

Intangible Assets

Intangible assets consist of acquired technology, customer relationships, trade name and other finite intangibles 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.

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. As of December 31, 2024 and 2023, the Company has no goodwill.

Impairment

Impairment: Goodwill

The Company fully impaired its goodwill during the year ended December 31, 2023. The Company's stock price declined below book value during the fourth quarter of 2023. Management believes the decline of the stock price was due primarily to missed projections and reduced liquidity.

Impairment: 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.

Impairment: 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 on a per-site basis 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.

Impairment: ROU Assets

The Company evaluates ROU assets in accordance with ASC 360, Property, Plant, and Equipment ("ASC 360"). The primary assets underlying the ROU balances are GenDrive units and hydrogen infrastructure utilized in PPA executory contracts with customers. ROU assets are evaluated 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. Upon the occurrence of a triggering event, the ROU 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. The Company has generally determined that the lowest level of identifiable cash flows is based on the customer sites. The ROU carrying value is allocated to the various assets under the related lease agreement based on the initial revenue recognized at the execution of the sale lease back agreement. The cash inflows are the contract revenues from the PPA customer and the cash outflows are derived from costs incurred to service the assets under the PPA agreements. 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. The development of future cash flows also requires the Company to make assumptions and to apply judgment, including the timing of future expected cash flows, future cost savings initiatives, and determining recovery values. Changes to 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 ROU. Assets are not impaired below their then estimated fair values. To determine fair value the Company determined a fair value of a lease using a market rent. Market rent assumptions included useful life and discount rate. The estimate of fair value represents our best estimates of these factors and is subject to variability. Changes to the key assumptions related to future performance and other economic and market factors could adversely affect our impairment evaluation.

Impairment: Contract Assets

The Company assesses contract assets for impairment when there is a significant change in facts and circumstances of the underlying contract in accordance with ASC 606, *Revenue from Contracts with Customers* ("ASC 606") and ASC 310, *Receivables* ("ASC 310"). Impairment loss is recognized when it is probable that the Company will be unable to collect the contract consideration to which it is entitled from the customer. The Company does not recognize any additional revenue from the underlying contract.

Impairment: Investments in Non-consolidated Entities and Non-marketable Equity Securities

For the Company's investments in non-consolidated entities and non-marketable equity securities, the Company evaluates on a quarterly basis whether any indicators of impairment exist in accordance with ASC 321, *Investments* — *Equity Securities* ("ASC 321") and ASC 323, *Investments* — *Equity Method and Joint Ventures* ("ASC 323").

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 19, "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.

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 statements of operations.

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. As we continue to work to improve quality and reliability, 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 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.

Product Warranty Reserve

In conjunction with certain product sales, we provide warranties that cover factors such as non-conformance to specifications and defects in material and design. Generally, sales of equipment and related infrastructure are accompanied by a one to two year standard warranty. These warranties are included in the estimates to complete the related programs. The Company also repairs or replaces certain products or parts found to be defective under normal use and service with an item of equivalent value, at our option, without charge during the warranty period. We quantify and record an estimate for warranty-related costs based on our actual historical claims experience and current repair costs. We adjust accruals as warranty claims data and historical experience warrant.

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 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.

Convertible Senior Notes

In May 2020, the Company issued \$212.5 million in aggregate principal amount of the 3.75% Convertible Senior Notes due 2025 (the "3.75% Convertible Senior Notes") as described in Note 17, "Convertible Senior Notes". The Company exchanged \$138.8 million in aggregate principal amount of the 3.75% Convertible Senior Notes for \$140.4 million in aggregate principal amount of the 7.00% Convertible Senior Notes due 2026 (the "7.00% Convertible Senior Notes"), also described in Note 17, "Convertible Senior Notes". The Company accounts for its 7.00% Convertible Senior Notes and its 3.75% Convertible Senior Notes as liabilities 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 7.00% Convertible Senior Notes and the 3.75% Convertible Senior Notes.

On November 11, 2024, the Company entered into the Debenture Purchase Agreement with Yorkville pursuant to which the Company issued to Yorkville an unsecured convertible debenture in aggregate principal amount of \$200.0 million (the "6.00% Convertible Debenture") in exchange for the payment of \$190.0 million, as described in Note 17, "Convertible Senior Notes". The company elected to measure its 6.00% Convertible Debenture at fair value in accordance with the fair value option. Each period the fair value of the notes will be remeasured and resulting gains/losses from change in fair value will be recognized within the consolidated statements of operations, except for any changes in instrument-specific credit risk which will be separately presented in other comprehensive income. Refer to Note 5, "Fair Value Measurements", for further information. The Company has elected as an accounting policy to present interest expense separately from the changes in fair value of the 6.00% Convertible Debenture.

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 29, "Subsequent Events".

Recent Accounting Pronouncements

Recently Adopted Accounting Pronouncements

In November 2023, ASU 2023-07, *Improvements to Reportable Segment Disclosures*, was issued to improve reportable segment disclosure requirements, primarily through enhanced disclosures about significant segment expenses. The purpose of the amendments is to enable investors to better understand an entity's overall performance and assess potential future cash flows. This update was effective for fiscal years beginning after December 15, 2023. Refer to Note 24, "Segment and Geographic Area Reporting".

Recently Issued and Not Yet Adopted Accounting Pronouncements

In November 2024, ASU 2024-04, *Debt with Conversion and Other Options*, was issued to improve the relevance and consistency in application of the induced conversion guidance in Subtopic 470-20. This standard is effective for annual periods beginning after December 15, 2025, including interim periods within those fiscal years. The Company has not yet adopted ASU 2024-04 and is still evaluating the impact of the adoption on its consolidated financial statements.

In November 2024, ASU 2024-03, *Disaggregation of Income Statement Expenses*, was issued which requires disclosure in the notes to the financial statements of specified information about certain costs and expenses. This standard is effective for annual periods beginning after December 15, 2026, and interim periods within annual periods beginning after December 15, 2027, on a prospective basis, with early adoption and retrospective application permitted. The Company has not yet adopted ASU 2024-03 and is still evaluating the impact of the adoption on its consolidated financial statements.

In December 2023, ASU 2023-09, *Improvements to Income Tax Disclosures*, was issued to require public business entities to annually disclose specific categories in the rate reconciliation and provide additional information for reconciling items that meet a quantitative threshold. Additionally, annual disclosures on income taxes paid will be required to be further disaggregated by federal, state, and foreign taxes. This update is effective for annual periods beginning after December 15, 2024. The Company has not yet adopted ASU 2023-09 and is still evaluating the impact of the adoption on its consolidated financial statements.

Climate Disclosures

In March 2024, the SEC issued Release No. 33-11275, *The Enhancement and Standardization of Climate-Related Disclosures for Investors*, which includes final rules that enhance the transparency of climate-related disclosures and require companies to disclose material climate-related risks; activities to mitigate or adapt to such risks; information about the board of directors' oversight of climate-related risks and management's role in managing material climate-related risks; and information on any climate-related targets or goals that are material to the registrant's business, results of operations, or financial condition. Companies are also required to disclose the financial statement effects of severe weather events and other natural conditions in the notes to the financial statements, and certain large companies are also required to disclose Scope 1 and Scope 2 greenhouse gas emissions, when material. As a large accelerated filer, most disclosure requirements are effective for the Company beginning with the year ending December 31, 2025. The SEC has been the subject of various lawsuits since adopting these rules. As a result of ongoing litigation, the SEC issued an order in April 2024 to stay the effectiveness of the rules while judicial review is pending. We are continuing to monitor developments associated with these rules and are currently evaluating the impact of these rules on our consolidated financial statements and related disclosures.

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 acquisition of CIS contributed \$46.5 million, \$47.7 million and \$3.7 million to total consolidated revenue for the years ended December 31, 2024, 2023 and 2022, respectively. The Company determined that the net income from the CIS acquisition for the years ended December 31, 2024, 2023 and 2022 was immaterial.

The CIS acquisition was not considered material to our consolidated results of operations or financial position and, therefore, pro forma financial information is not presented.

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 acquisition of Joule contributed \$9.5 million, \$85.2 million and \$36.5 million to total consolidated revenue for the years ended December 31, 2024, 2023 and 2022, respectively. The Company determined that the net income from the Joule acquisition for the years ended December 31, 2024, 2023 and 2022 was immaterial.

The acquisition of Joule would have contributed \$36.8 million and \$3.6 million to total consolidated revenue and net income for the year ended December 31, 2022, respectively, had the acquisition occurred on January 1, 2021. The following table reflects the unaudited consolidated pro forma results of operations for the year ended December 31, 2022 assuming that the Joule acquisition had occurred on January 1, 2021 (in thousands):

	Year ended		
	December 31, 2022		
	 (unaudited)		
Revenue	\$ 701,742		
Net loss	\$ (723,934)		

4. Investments

Available-for-sale and Equity Securities

As of December 31, 2024 and 2023, the Company has no investments classified as available-for-sale or equity securities. The Company received proceeds from the sales and maturities of its remaining available-for-sale securities totaling \$1.4 billion during the year ended December 31, 2023. The Company received proceeds from the sales of its remaining equity securities totaling \$144.3 million during the year ended December 31, 2023.

We regularly review whether available-for-sale securities are other-than-temporarily impaired ("OTTI"). Available-for-sale securities with unrealized losses are considered OTTI if the Company intends to sell the security or if the Company will be required to sell the security prior to any anticipated recovery. If the Company determines that a security is OTTI under these circumstances, the impairment recognized in earnings is measured as the difference between the amortized cost and the current fair value. The Company recorded an other-than-temporary impairment of \$10.8 million during the year ended December 31, 2023 for available-for-sale debt securities in an unrealized loss position due to a change in the Company's ability and intent to retain these investments for a period of time sufficient to allow for any anticipated recovery in the fair value. The other-than-temporary impairment charge was realized when the Company sold its remaining available-for-sale securities and equity securities during the fourth quarter of 2023. No such OTTI charge was recorded for the years ended December 31, 2024 and 2022.

Investments in Non-consolidated Entities and Non-marketable Equity Securities

Non-marketable Equity Securities

Our investment in non-marketable equity securities was \$2.6 million and \$5.6 million as of December 31, 2024 and 2023, respectively.

Equity Method Investments

As of December 31, 2024 and 2023, 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):

	As of December 31, 2024				As of December 31, 2				
Investee	Formation Common Date Ownersh		Carrying Value				Carrying Value		
HyVia	Q2 2021	50%	\$		50%	\$	(2,068)		
AccionaPlug	Q4 2021	50%		4,276	50%		3,198		
Clean H2 Infra Fund	Q4 2021	5%		29,111	5%		13,357		
SK Plug Hyverse	Q1 2022	49%		49,488	49%		41,609		
			\$	82,875		\$	56,096		

On December 10, 2024, HyVia announced that it entered into receivership proceedings opened by judgment of the Commercial Court of Versailles. This was the direct consequence of the slow emergence of hydrogen mobility ecosystems locally, coupled with significant development costs of hydrogen innovation and an insufficient regulatory environment. An observation period of six (6) months has been opened during which takeover or backing by new investors may be considered and a judicial trustee was appointed to carry out this process. Following expiry of the January 31, 2025 delay, with no offer of potential buyers having been received, HyVia has entered into a judicial liquidation proceeding opened by judgment of the Economic Activities Court of Versailles dated February 18, 2025 (judgment publication being still pending). As of December 31, 2023, the Company's investment in HyVia was negative due to historical losses. As of December 31, 2023, the Company was committed to fund its share of losses of the joint venture and, therefore, continued to record losses as incurred. The negative equity investment was recorded on the consolidated balance sheets to the contingent consideration, loss accrual for service contracts, and other liabilities financial statement line item. During 2024, the Company recorded losses for HyVia which resulted in the investments in non-consolidated entities and non-marketable equity securities financial statement line item of the consolidated balance sheets related to HyVia to be \$0 as of December 31, 2024.

During the year ended December 31, 2024, the Company contributed approximately \$32.3 million, \$2.9 million, \$16.0 million and \$17.4 million, respectively, to HyVia, AccionaPlug S.L., SK Plug Hyverse and Clean H2 Infra Fund.

The Company's capital commitments related to its equity method investments as of December 31, 2024 was \$4.6 million, all of which is expected to be paid during 2025.

5. Fair Value Measurements

The Company records the fair value of assets and liabilities in accordance with 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 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.

There were no transfers between Level 1, Level 2, or Level 3 for the year ended December 31, 2024. 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., SK Plug Hyverse and Clean H2 Infra Fund.

The following table summarizes the carrying amount and estimated fair value of the Company's financial instruments at December 31, 2024 and 2023 (in thousands):

	As of December 31, 2024									
	Carrying Amount				Fair Value Meas			Measure	surements	
					Level 1		Level 2		el 2 Leve	
Liabilities										
6.00% Convertible Debenture		173,150	\$	173,150	\$	_	\$	_	\$	173,150
Contingent consideration	\$	60,746	\$	60,746	\$	_	\$	_	\$	60,746
	As of December 31, 2023									
	(Carrying		Fair	Fair Value Measurements				S	
		Amount		Value	L	evel 1	Le	evel 2		Level 3
Liabilities		,				,				

The liabilities measured at fair value on a recurring basis that have unobservable inputs and are therefore categorized as Level 3 are related to the 6.00% Convertible Debenture, as described in Note 17, "Convertible Senior Notes", and contingent consideration.

126,216

126,216

126,216

6.00% Convertible Debenture

Contingent consideration

The fair value of the 6.00% Convertible Debenture as of December 31, 2024 is comprised of a single financial liability in which the Company elected the fair value option under ASC 825, *Financial Instruments* ("ASC 825"), with changes in fair value recorded in gain/loss from changes in fair value of 6.00% Convertible Debenture in the consolidated statements of operations. The Company elected the fair value option due its multiple conversions features required to be presented at fair value. The Company has also elected to present interest expense separately from the changes in fair value of the 6.00% Convertible Debenture measured at fair value through earnings. Total changes in the fair value of the liability that resulted from a change in the instrument-specific credit risk will be separately recorded in other comprehensive income. There was no change in the instrument-specific credit risk during the year ended December 31, 2024.

The company estimated and recorded the fair value of the 6.00% Convertible Debenture upon its issuance date of November 12, 2024 at its cash value because it was negotiated at arm's length. The fair value of the 6.00% Convertible Debenture as of December 31, 2024 was based on a Monte Carlo Simulation of stock price of the company on a daily basis and a discounted cash flow model that incorporates the amortization schedule, contingent on the daily simulated stock price. The valuation utilized significant Level 3 unobservable inputs, including implied yield, volatility, and risky discount rate. Other significant assumptions include risk-free rate, principal value, the Company's common stock price, maturity date and the various conversion features and prices per the agreement. Significant judgment is required in selecting the significant inputs and assumptions. Actual assumptions may differ from our current estimates and such differences could materially impact fair value of the convertible note.

Refer to Note 17, "Convertible Senior Notes", for the change in the carrying amount of the 6.00% Convertible Debenture for the year ended December 31, 2024.

Contingent consideration

The fair value of contingent consideration as of December 31, 2024 is related to the Joule Processing LLC ("Joule") acquisition in 2022 and the Frames Holding B.V. ("Frames") acquisition in 2021. The fair value of contingent consideration as of December 31, 2023 is related to the Joule acquisition in 2022, the Frames acquisition in 2021 and the Giner ELX, Inc. ("Giner") and United Hydrogen Group Inc. ("UHG") acquisitions in 2020.

In connection with the Joule acquisition, the Company initially recorded on its consolidated balance sheets a liability of \$41.7 million representing the fair value of contingent consideration payable. The fair value of this contingent consideration was \$48.2 million and \$75.5 million as of December 31, 2024 and 2023, respectively. The decrease compared to the year ended December 31, 2023 was primarily due to a decrease of \$14.3 million recorded in change in fair value of contingent consideration in the consolidated statements of operations during the year ended December 31, 2024. In addition, payments were made that reduced the fair value of the liability by \$13.0 million during the year ended December 31, 2024.

In connection with the Frames acquisition, the Company recorded on its consolidated balance sheets a liability of \$29.1 million representing the fair value of contingent consideration payable. The fair value of this contingent consideration was \$12.5 million and \$31.8 million as of December 31, 2024 and 2023, respectively. The decrease compared to the year ended December 31, 2023 was primarily due to payments that reduced the fair value of the liability by \$15.8 million. In addition, a decrease of \$1.9 million was recorded in change in fair value of contingent consideration in the consolidated statements of operations for the year ended December 31, 2024. Finally, the fair value of the liability decreased by \$1.6 million due to foreign currency translation gains.

In connection with the UHG acquisition, the Company initially recorded on its consolidated balance sheets a liability of \$1.1 million representing the fair value of contingent consideration payable. The contingent consideration was fully settled during the second quarter of 2024 and the fair value of this contingent consideration was \$0.9 million as of December 31, 2023. The decrease of \$0.9 million was due to payments that reduced the fair value of the liability by \$1.0 million during the second quarter of 2024. Partially offsetting this decrease was an increase of \$0.1 million recorded in change in fair value of contingent consideration in the consolidated statements of operations during the year ended December 31, 2024. The \$1.0 million payment made during the second quarter of 2024 settled the remaining earn-out obligation.

In connection with the Giner acquisition, the Company initially recorded on its consolidated balance sheets a liability of \$16.0 million representing the fair value of contingent consideration payable. The contingent consideration was fully settled during the second quarter of 2024 and the fair value of this contingent consideration was \$18.0 million as of December 31, 2023. The decrease of \$18.0 million was due to payments that reduced the fair value of the liability by \$18.2 million during the second quarter of 2024. Partially offsetting this decrease was an increase of \$0.2 million recorded in change in fair value of contingent consideration in the consolidated statements of operations during the year ended December 31, 2024. The \$18.2 million payment during the second quarter of 2024 was paid in common stock and warrants and settled the remaining obligation of the earn-out. As part of the \$18.2 million settlement of Giner's earn-out obligation on May 24, 2024, the Company issued warrants to the sellers of Giner and the Company registered for resale up to 3,461,371 shares (the "Giner Warrant Shares") of the Company's common stock issuable upon exercise of the warrants. The exercise price of the Giner Warrant Shares was \$3.3008 per share. The warrants had not been exercised as of December 31, 2024.

In the consolidated balance sheets, contingent consideration is recorded in the contingent consideration, loss accrual for service contracts, and other liabilities financial statement line item, and was comprised of the following unobservable inputs for the year ended December 31, 2024:

Financial Instrument	 Fair Value	Valuation Technique	Unobservable Input	Range (weighted average)
Contingent consideration	\$ 60,746	Scenario-based method	Credit spread	11.83%
			Discount rate	15.91% - 16.00%
	60,746			

In the consolidated balance sheets, contingent consideration is recorded in the contingent consideration, loss accrual for service contracts, and other liabilities financial statement line item, and was comprised of the following unobservable inputs for the year ended December 31, 2023:

Financial Instrument	Fair Value	Valuation Technique	Unobservable Input	Range (weighted average)
Contingent consideration	\$ 126,216	Scenario-based method	Credit spread	13.61%
			Discount rate	17.71% - 19.06%
	126,216			

The change in the carrying amount of contingent consideration for the year ended December 31, 2024 was as follows (in thousands):

	ear ended aber 31, 2024
Beginning balance as of December 31, 2023	\$ 126,216
Cash payments	(29,825)
Payment settled in common stock and warrants	(18,241)
Change in fair value of contingent consideration	(15,847)
Foreign currency translation adjustment	(1,557)
Ending balance as of December 31, 2024	\$ 60,746

Assets and Liabilities Measured at Fair Value on a Non-Recurring Basis

In addition to assets and liabilities that are recorded at fair value on a recurring basis, impairment indicators may subject long-lived assets and finite-lived intangible assets to non-recurring fair value measurements. During the fourth quarter of 2024, property, plant and equipment, net, intangible assets, net and right of use assets related to operating leases, net were written down to their estimated fair values. A decrease in demand of the global hydrogen market deteriorated cash flow projections which indicated that the carrying values of the long-lived assets may not be recoverable. The inputs to these models are considered to be Level 3 significant unobservable inputs.

The Level 3 significant unobservable inputs that were used in the valuation of the long-lived assets as of October 1, 2024 were:

			Range (weighted
Financial Instrument	Valuation Technique	Unobservable Input	average)
Property, plant and equipment, net	Cost approach	Residual value	0.0% - 12.0%
Intangibles assets, net	Relief from royalty method	Royalty rate	0.1% - 2.0%
		Discount rate	15.0% - 20.5%
		Obsolescence factor	6.7% - 20.0%
	Multi-period excess earnings method	Discount rate	15.0% - 16.0%
Right of use assets related to operating leases, net	Income approach (DCF method)	Discount rate	5.4% - 11.1%

Refer to Note 8, "Impairment", for further information.

6. Earnings Per Share

Basic earnings per common stock are computed by dividing net loss by the weighted average number of common stock outstanding during the reporting period. 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.

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

		December 31,				
	2024	2022				
Numerator:						
Net loss attributable to Plug Power Inc.	\$ (2,104,701)	\$ (1,368,833)	\$ (724,008)			
Denominator:						
Weighted average number of common stock outstanding	785,024,373	595,468,419	579,716,708			

The potentially dilutive securities are summarized as follows:

	As of December 31,					
	2024	2023	2022			
Stock options outstanding (1)	38,690,148	39,261,362	27,598,269			
Restricted stock and restricted stock units outstanding (2)	6,750,372	6,732,884	6,276,376			
Common stock warrants (3)	82,022,634	78,561,263	88,774,725			
Convertible Senior Notes (4)	105,868,502	39,170,766	39,170,766			
Number of dilutive potential shares of common stock	233,331,656	163,726,275	161,820,136			

⁽¹⁾ During the years ended December 31, 2024, 2023, and 2022, the Company granted options for 15,180,435, 13,254,689 and 4,761,724 shares of common stock, respectively.

(3) In May 2024, the Company issued warrants in connection with an earn-out settlement agreement with Giner as described in Note 5, "Fair Value Measurements", and the Company registered for resale up to 3,461,371 shares of the Company's common stock issuable upon exercise of the warrants. The warrants had not been exercised as of December 31, 2024.

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 19, "Warrant Transaction Agreements". The warrant had not been exercised as of December 31, 2024, 2023 and 2022, respectively.

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 19, "Warrant Transaction Agreements". The warrant was exercised with respect to 34,917,912, 34,917,912 and 24,704,450 shares of the Company's common stock as of December 31, 2024, 2023 and 2022, 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 19, "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, 2024, 2023 and 2022.

(4) On November 11, 2024, the Company entered into the Debenture Purchase Agreement under which the Company agreed to sell and issue to the Investor the 6.00% Convertible Debenture as described in Note 17, "Convertible Senior Notes". There were no conversions of the 6.00% Convertible Debenture during the year ended December 31, 2024.

In March 2024, the Company exchanged \$138.8 million in aggregate principal amount of the 3.75% Convertible Senior Notes for \$140.4 million in aggregate principal amount of the 7.00% Convertible Senior Notes as described in

⁽²⁾ During the years ended December 31, 2024, 2023, and 2022, the Company granted 4,052,391, 4,131,193 and 4,289,682 shares of restricted stock and restricted stock units, respectively.

Note 17, "Convertible Senior Notes". There were no conversions of the 7.00% Convertible Senior Notes during the year ended December 31, 2024.

In May 2020, the Company issued \$212.5 million in aggregate principal amount of the 3.75% Convertible Senior Notes as described in Note 17, "Convertible Senior Notes". There were no conversions of the 3.75% Convertible Senior Notes during the years ended December 31, 2024, 2023 and 2022.

7. Inventory

Inventory as of December 31, 2024 and 2023, consisted of the following (in thousands):

	De	ecember 31, 2024	D	ecember 31, 2023	
Raw materials and supplies - production locations	\$	385,455	\$	564,818	
Raw materials and supplies - customer locations		28,983		20,751	
Work-in-process		129,824		149,574	
Finished goods		138,380		226,110	
Inventory	\$	682,642	\$	961,253	

Inventory is primarily comprised of raw materials, work-in-process, and finished goods. The decrease in inventory is primarily due to consumption and reduced raw material purchases. In addition, the Company has recorded reductions to inventory which comprised of excess and obsolete items and related lower of cost or net realizable value adjustments of \$158.9 million and \$85.2 million as of December 31, 2024 and 2023, respectively.

8. Impairment

During the fourth quarter of 2024, the Company recognized that sales and margin projections were likely not to be met for 2024. Additionally, during the fourth quarter of 2024, the Company performed strategic planning, analyzing its various product lines, and it was determined at that time to update the future sales projections and related cash flow projections for certain of those product lines. As a result, there was a reduction in the cash flow projections during the fourth quarter of 2024 to several of the Company's asset groups indicating that the carrying values of their long-lived assets (including property, plant, and equipment, equipment related to power purchase agreements and fuel delivered to customers, and right of use assets related to operating leases) and finite-lived intangible assets may not be recoverable.

Asset groups are the unit of account for a long-lived asset or assets to be held and used which represent the lowest level for which identifiable cash flows are largely independent of other groups of assets and liabilities. The decrease in cash flow projections for several asset groups was largely attributed to several factors, including the Company failing to meet 2024 sales and margin projections as well as decreased future cash flow projections across certain product lines including stationary, liquefiers and fuel cells for mobility projects related to HyVia. On December 10, 2024, HyVia announced that it entered into legal recovery proceedings recorded by the Commercial Court of Versailles. Additionally, the Company paused certain hydrogen production plant projects during the fourth quarter of 2024. This pause, as well as the decrease in cash flow projections, was primarily due to weakening demand in the global hydrogen market. As a result, the Company tested the recoverability of its long-lived assets and finite-lived intangibles by comparing the carrying values against undiscounted future cash flow projections and determined that an impairment existed.

During the fourth quarter of 2024, a significant amount of property, plant, and equipment were written down to their estimated fair values. The fair value for revenue generating assets was determined using a market approach utilizing prices for similar assets in active markets. The fair value for property, plant, and equipment was determined using a market approach, where available, and where not available, a cost approach. The fair value for equipment related to power purchase agreements and fuel delivered to customers was determined using a discounted cash flow income approach considering estimated market rent. The fair value for right of use assets related to operating leases was determined using a discounted cash flow income approach considering estimated market rent. The fair values for finite-lived intangible assets were determined using the income approach.

The Company recognized impairment charges of \$949.3 million during the year ended December 31, 2024 compared to \$269.5 million during the year ended December 31, 2023. The increase in impairment was primarily due to impairment charges of \$902.2 million resulting from the ASC 360 impairment analysis performed during the fourth quarter of 2024. Of the \$902.2 million, \$675.5 million was related to property, plant and equipment, \$1.6 million was related to equipment related to power purchase agreements and fuel delivered to customers, \$145.4 million was related to right of use assets related to operating leases, and \$79.7 million was related to finite-lived intangible assets. Additionally, during the fourth quarter of 2024 the Company recorded a \$38.3 million impairment charge related to contract assets and other current assets in which the Company determined it would be unable to collect the consideration from a customer contract, impairment charges of \$0.3 million related to property, plant and equipment as well as other impairment charges of \$0.1 million. Other impairment charges recorded during the year ended December 31, 2024 was \$8.4 million, of which \$3.0 million related to non-marketable equity securities and \$5.4 million related to property, plant and equipment.

The impairment charge of \$269.5 million for the year ended December 31, 2023 was primarily related to the impairment of goodwill of \$249.5 million as well as \$2.4 million related to contract assets, \$9.7 million related to other current assets, \$3.1 million related to property, plant and equipment, \$4.6 million was related to right of use assets related to operating leases and \$0.2 million related to equipment related to power purchase agreements and fuel delivered to customers.

To the extent there are further changes in market conditions or the performance of the Company's long-lived assets, there is a possibility that the Company could incur additional impairment charges in the future.

9. Property, Plant and Equipment

Property, plant and equipment at December 31, 2024 and 2023 consisted of the following (in thousands):

	I	December 31, 2024	 December 31, 2023
Land	\$	5,597	\$ 6,049
Construction in progress		502,936	1,109,896
Hydrogen production plants and related equipment		343,094	77,107
Leasehold improvements		15,633	95,229
Software, machinery, and equipment		40,861	229,352
Property, plant, and equipment		908,121	1,517,633
Less: accumulated depreciation		(41,792)	(81,456)
Property, plant, and equipment, net	\$	866,329	\$ 1,436,177

The decrease in the Company's property, plant and equipment balance was primarily due to impairment, depreciation and the Company's bifurcation of the ITC credit in the amount of \$31.3 million. The Company recorded impairment charges totaling of \$681.2 million, \$3.1 million and \$0.8 million for the years ended December 31, 2024, 2023 and 2022, respectively.

Construction in progress is primarily comprised of construction of three hydrogen production plants. 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, 2024 and 2023, we capitalized \$8.3 million and \$8.2 million of interest.

Depreciation expense related to property, plant and equipment was \$42.8 million, \$33.3 million and \$19.0 million for the years ended December 31, 2024, 2023 and 2022, respectively.

10. Equipment Related to Power Purchase Agreements and Fuel Delivered to Customers, Net

Equipment related to power purchase agreements and fuel delivered to customers, net, as of December 31, 2024 and 2023 consisted of the following (in thousands):

	December 31, 2024		De	ecember 31, 2023
Equipment related to power purchase agreements and fuel delivered to customers	\$	179,602	\$	139,651
Less: accumulated depreciation		(35,530)		(28,390)
Equipment related to power purchase agreements and fuel delivered to customers, net	\$	144,072	\$	111,261

As of December 31, 2024 and 2023, 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 \$9.3 million, \$8.0 million and \$6.9 million for the years ended December 31, 2024, 2023 and 2022, respectively.

The Company recorded an impairment charge of \$1.6 million, \$0.2 million and \$1.5 million for the years ended December 31, 2024, 2023 and 2022, respectively.

11. Intangible Assets and Goodwill

The gross carrying amount and accumulated amortization of the Company's acquired identifiable intangible assets as of December 31, 2024 were as follows (in thousands):

	Weighted Average	Gross Carrying		rrying Accumulated						
	Amortization Period	Amount		Amount		1 Amount		A	mortization	Total
Acquired technology	14 years	\$	34,872	\$	(7,805)	\$ 27,067				
Dry stack electrolyzer technology	10 years		11,351		(383)	10,968				
Customer relationships, trade name, and other	15 years		56,989		(10,364)	46,625				
		\$	103,212	\$	(18,552)	\$ 84,660				

The gross carrying amount and accumulated amortization of the Company's acquired identifiable intangible assets as of December 31, 2023 were as follows (in thousands):

	Weighted Average Amortization Period	Gross Carrying Amount		• •				, ,		ccumulated mortization	Total
Acquired technology	14 years	\$	103,060	\$ (20,204)	\$ 82,856						
Dry stack electrolyzer technology	10 years		29,000	(5,317)	23,683						
Customer relationships, trade name, and other	13 years		103,981	 (21,634)	 82,347						
		\$	236,041	\$ (47,155)	\$ 188,886						

The change in the gross carrying amount of the acquired technology and customer relationships, trade name and other during the year ended December 31, 2024 was primarily due to an impairment charge of \$79.7 million. The Company recorded an impairment charge of \$20 thousand and \$0 for the years ended December 31, 2023 and 2022, respectively.

Amortization expense for acquired identifiable intangible assets for the years ended December 31, 2024, 2023 and 2022 was \$23.4 million, \$19.1 million and \$21.2 million, respectively. Of the total amortization expense for the year ended December 31, 2024, \$7.2 million was due to accelerated amortization which resulted from the Company's annual impairment analysis.

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

2025	\$ 8,008
2026	7,945
2027	7,945
2028	7,608 7,495
2029	7,495
2030 and thereafter	45,659
Total	\$ 84,660

As of December 31, 2024 and 2023, the Company has no goodwill.

12. Accrued Expenses

Accrued expenses at December 31, 2024 and 2023 consisted of (in thousands):

	December 31, 2024			December 31, 2023
Accrued payroll and compensation related costs	\$	14,771	\$	32,584
Accrual for capital expenditures		20,040		83,781
Accrued accounts payable		39,808		64,767
Accrued sales and other taxes		24,182		17,207
Accrued interest		2,540		562
Accrued other		1,804		1,643
Total	\$	103,145	\$	200,544

The decrease in accrued expenses for the year ended December 31, 2024 compared to the year ended December 31, 2023 was primarily due to a decrease in spend related to capital expenditures.

13. Extended Maintenance Contracts and Warranty Reserve

Loss Accrual

On a quarterly basis, we evaluate any potential losses related to our extended maintenance contracts for sales of equipment, related infrastructure and other that have been sold. The following table shows the roll forward of balances in the accrual for loss contracts (in thousands):

	ear ended iber 31, 2024	Year ended December 31, 2023		
Beginning balance	\$ 137,853	\$	81,066	
Provision for loss accrual	45,226		85,375	
Releases to service cost of sales	(51,578)		(29,713)	
Increase to loss accrual related to customer warrants	3,313		971	
Foreign currency translation adjustment	 (458)		154	
Ending balance	\$ 134,356	\$	137,853	

The Company decreased the provision for loss accrual primarily due to improved pricing structure and reduction of new GenDrive deployments in 2024, partially offset by an increase in the provision related to stationary systems.

Product Warranty Reserve

On a quarterly basis, we evaluate our product warranty reserve. The Company applies a failure rate based on product type on a contract-by-contract basis to determine its product warranty reserve liability. The following table shows the roll forward of product warranty reserve (in thousands):

	Year ended December 31, 2		Year ended December 31, 2023
Beginning balance	\$ 8	044 \$	2,954
Additional provision due to new issuances	8.	864	7,599
Adjustments to existing warranty provisions	(4)	801)	(2,509)
Releases due to cash receipts		_	_
Ending balance	\$ 12.	107 \$	8,044

The product warranty reserve balance increased during the year ended December 31, 2024 primarily due to an increase in electrolyzer systems for which revenue was recognized.

14. Operating and Finance Lease Liabilities

As of December 31, 2024, 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 six 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 23, "Commitments and Contingencies", for a description of cash held as security associated with the leases.

The Company has finance leases associated with its property and equipment in Latham, New York and at fueling customer locations.

Future minimum lease payments under operating and finance leases (with initial or remaining lease terms in excess of one year) as of December 31, 2024 were as follows (in thousands):

	Operating Lease Liability		Finance Lease Liability		Total Lease Liabilities
2025	\$	100,882	\$	14,786	\$ 115,668
2026		88,834		11,926	100,760
2027		74,819		8,250	83,069
2028		52,459		1,940	54,399
2029		28,877		400	29,277
2030 and thereafter		128,374		2,898	131,272
Total future minimum payments		474,245		40,200	514,445
Less imputed interest		(160,847)		(4,620)	(165,467)
Total	\$	313,398	\$	35,580	\$ 348,978

Rental expense for all operating leases was \$98.1 million, \$95.0 million, and \$67.6 million for the years ended December 31, 2024, 2023 and 2022, respectively.

As of December 31, 2024 and 2023, security deposits associated with sale/leaseback transactions were \$7.4 million and \$7.4 million, respectively, and were included in other assets in the consolidated balance sheets.

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

	Year ended December 31, 2024			ear ended mber 31, 2023			
Cash payments - operating cash flows (in thousands)	\$	99,934	\$	91,637	\$	63,214	
Weighted average remaining lease term (years)		7.06		5.76		6.52	
Weighted average discount rate		11.1 %	Ó	11.3 %	Ó	11.2 %	

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 statements of operations), and were \$7.2 million, \$7.5 million and \$6.2 million for the years ended December 31, 2024, 2023 and 2022, respectively.

As of December 31, 2024 and 2023, the right of use assets associated with finance leases, net was \$51.8 million and \$57.3 million, respectively. The accumulated depreciation for these right of use assets was \$12.9 million and \$9.0 million at December 31, 2024 and 2023, respectively.

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

	Year ended Year ended December 31, 2024 December 31, 2023				ear ended mber 31, 2022
Cash payments - operating cash flows (in thousands)	\$ 2,740	\$	3,059	\$	2,447
Cash payments - financing cash flows (in thousands)	\$ 9,341	\$	8,638	\$	6,586
Weighted average remaining lease term (years)	3.09		3.87		3.92
Weighted average discount rate	6.8 %	ó	6.8 %	ó	6.7 %

The Company had outstanding obligations to Wells Fargo under several Master Lease Agreements totaling \$132.2 million and \$171.3 million for the years ended December 31, 2024 and 2023, respectively. These outstanding obligations are included in the operating lease liabilities and finance obligations financial statement line items on the consolidated balance sheets.

15. Finance Obligations

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 as of December 31, 2024 was \$276.7 million, \$77.5 million and \$199.2 million of which was classified as short-term and long-term, respectively, on the accompanying consolidated balance sheets. The outstanding balance of this obligation as of December 31, 2023 was \$350.8 million, \$74.0 million and \$276.8 million of which was classified as short-term and long-term, respectively, on the accompanying consolidated balance sheets. The amount is amortized using the effective interest method. Interest expense recorded related to finance obligations for the years ended December 31, 2024, 2023 and 2022 was \$36.7 million, \$39.6 million and \$29.7 million, respectively.

During the year ended December 31, 2024, the Company entered into failed sale/leaseback transactions that were accounted for as financing obligations, resulting in \$60.3 million of additional finance obligations. No gain or loss was recorded as a result of these transactions. The outstanding balance of the Company's finance obligations related to sale/leaseback transactions as of December 31, 2024 was \$70.7 million, \$5.6 million and \$65.1 million of which was classified as short-term and long-term, respectively on the accompanying consolidated balance sheets with a residual value of \$37.7 million. The outstanding balance of the Company's finance obligations related to sale/leaseback transactions as of December 31, 2023 was \$17.6 million, \$10.0 million and \$7.6 million of which was classified as short-term and long-term, respectively on the accompanying consolidated balance sheets with no residual value.

Future minimum payments under finance obligations notes above as of December 31, 2024 were as follows (in thousands):

	Sale of Future Revenue - Debt		Sale/Leaseback Financings		Total Finance Obligations
2025	\$ 104,547	\$	18,525	\$	123,072
2026	87,824		14,698		102,522
2027	71,253		14,698		85,951
2028	51,188		14,484		65,672
2029	24,082		12,153		36,235
2030 and thereafter	1,421		11,742		13,163
Total future minimum payments	340,315	'	86,300		426,615
Less imputed interest	 (63,606)		(53,297)		(116,903)
Total	\$ 276,709	\$	33,003	\$	309,712

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

	ear ended mber 31, 2024		ear ended nber 31, 2023	Year ended December 31, 20		
Cash payments (in thousands)	\$ 117,988	\$	96,781	\$	72,377	
Weighted average remaining term (years)	4.10		4.49		4.84	
Weighted average discount rate	12.3 %	ó	11.3 %)	11.1 %	

The fair value of the Company's total finance obligations approximated their carrying value for the years ended December 31, 2024 and December 31, 2023.

16. Long-Term Debt

During the second quarter of 2024, the Company began repaying the principal and interest on a \$2.0 million allowance for tenant work related to its manufacturing facility in Slingerlands, NY. In accordance with ASC 842, *Leases* ("ASC 842"), the allowance is treated as a freestanding financial instrument separate from the facility lease and is accounted for as long-term debt. The outstanding principal and carrying value of the debt was \$1.7 million as of December 31, 2024, \$0.2 million and \$1.5 million of which was classified as short-term and long-term, respectively, on the accompanying consolidated balance sheets.

In June 2020, the Company acquired debt as part of the acquisition of UHG. The outstanding carrying value of the debt was \$1.2 million and \$3.9 million as of December 31, 2024 and 2023, respectively. As of December 31, 2024, the outstanding principal on the debt was \$2.1 million and the unamortized debt discount was \$0.9 million, of which \$0.4 million and \$0.5 million was classified as short-term and long-term, respectively, bearing varying interest rates ranging from 7.3% to 7.6%. The debt is scheduled to mature in 2026. As of December 31, 2024, the principal balance was due at each of the following dates (in thousands):

December 31, 2025	1,200
December 31, 2026	900
Total outstanding principal	\$ 2,100

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 statements of operations.

17. Convertible Senior Notes

6.00% Convertible Debenture

On November 11, 2024, the Company entered into the Debenture Purchase Agreement pursuant to which the Company issued to Yorkville the 6.00% Convertible Debenture in exchange for the payment of \$190.0 million. The 6.00% Convertible Debenture was issued in a private placement in reliance upon an exemption from registration provided by Section 4(a)(2) of the Securities Act of 1933, as amended (the "Securities Act"). The 6.00% Convertible Debenture ranks pari passu in right of payment with all other outstanding and future senior indebtedness of the Company.

The 6.00% Convertible Debenture bears interest at a rate of 6.00% per annum and is payable on the second year anniversary of the issuance date of the 6.00% Convertible Debenture (the "Maturity Date") or earlier redemption date. The interest rate will increase to a rate of 16.0% per annum upon the occurrence and during the continuance of an event of default under the 6.00% Convertible Debenture.

The 6.00% Convertible Debenture provides that Yorkville may convert all or any portion of the principal amount of the 6.00% Convertible Debenture, together with any accrued and unpaid interest thereon, at an initial conversion price of \$2.90 (the "Fixed Price"), representing a conversion premium of 146% to the last reported sale price of the Company's common stock on November 11, 2024. In certain circumstances, Yorkville will be permitted to convert up to \$22.5 million aggregate principal amount of the 6.00% Convertible Debenture plus accrued and unpaid interest thereon, each calendar month beginning with December 2024, at a conversion price equal to the lower of the (1) Fixed Price and (2) 97.25% of the lowest daily volume-weighted average price for the Company's common stock during the three trading days immediately preceding the applicable conversion date (the "Market Price"); provided that such Market Price is not less than \$0.3941 (the "Floor Price"). The Fixed Price is subject to adjustment in certain circumstances including if the Company issues shares of common stock at price per share that is less than the Fixed Price or certain convertible securities with a conversion price that is less than the Fixed Price (the "Dilutive Price"), in which case the Fixed Price would be adjusted to equal the Dilutive Price, subject to certain exceptions. Yorkville is not permitted to convert the 6.00% Convertible Debenture to the extent that the shares of common stock deliverable upon conversion thereof would exceed 19.99% of the Company's outstanding shares immediately prior to executing the Debenture Purchase Agreement (the "Exchange Cap") without prior stockholder approval.

If (1) the volume-weighted average price of the Company's common stock is below the Floor Price for a specified period of time, (2) the Company has issued more than 99% of the shares of common stock available under the Exchange Cap or (3) a registration default has occurred with respect to the resale registration statement registering the shares of Common Stock potentially underlying the 6.00% Convertible Debenture, then Yorkville may require the Company to redeem or convert, at the Company's discretion, \$22.5 million of the principal amount of the 6.00% Convertible Debenture, a premium thereon equal to 2.75% of such principal amount and accrued interest thereon on a monthly basis, unless and until such event is cured in accordance with the provisions of the 6.00% Convertible Debenture.

The Company has the right to redeem the 6.00% Convertible Debenture if the volume-weighted average price of the Company's common stock is less than the Fixed Price at a redemption price equal to 102.75% of the principal amount redeemed plus accrued and unpaid interest thereon. The Company also has the right to redeem the 6.00% Convertible Debenture if the volume-weighted average price of the Company's common stock is equal to or greater than the product of 1.3793 and the Fixed Price at a redemption price equal to 102.75% of the principal amount redeemed plus accrued and unpaid interest thereon or, in certain circumstances, 105.0% of the principal amount redeemed plus accrued and unpaid interest thereon.

The change in the carrying amount of the 6.00% Convertible Debenture for the year ended December 31, 2024 was as follows (in thousands):

	December 31, 2024
Principal received at issuance	\$ 190,000
Payments of principal settled in cash	(22,500
Payments or principal settled in common stock	
Loss on debt extinguishment	1,613
Change in fair value of the convertible senior note	3,424
Amortization of discount	613
Ending balance as of December 31, 2024	\$ 173,150

The following table summarizes the total interest expense and effective interest rate related to the 6.00% Convertible Debenture for the year ended December 31, 2024 (in thousands, except for the effective interest rate):

	Year ended	
	December 31, 2024	
Interest expense	\$ 1,596	
Amortization of discount	613	
Total	\$ 2,209	
Effective interest rate	8.7 9	%

7.00% Convertible Senior Notes

On March 20, 2024, the Company entered into separate, privately negotiated exchange agreements with certain holders of the Company's outstanding 3.75% Convertible Senior Notes pursuant to which the Company exchanged \$138.8 million in aggregate principal amount of the 3.75% Convertible Senior Notes, and accrued and unpaid interest of \$1.6 million on such notes to, but excluding, March 20, 2024, for \$140.4 million in aggregate principal amount of the Company's new 7.00% Convertible Senior Notes due 2026, in each case, pursuant to the exemption from registration provided by Section 4(a)(2) under the Securities Act. Following the exchange, approximately \$58.5 million in aggregate principal amount of the 3.75% Convertible Senior Notes remained outstanding with terms unchanged.

This transaction was accounted for as an extinguishment of debt. As a result, the Company recorded a loss on extinguishment of debt of \$14.0 million in the consolidated statements of operations during the first quarter of 2024. Loss on extinguishment of debt arises from the difference between the net carrying amount of the Company's debt and the fair value of the assets transferred to extinguish the debt.

The 7.00% Convertible Senior Notes are the Company's senior, unsecured obligations and are governed by the terms of an Indenture (the "Indenture"), dated as of March 20, 2024, entered into between the Company and Wilmington Trust, National Association, as trustee. The 7.00% Convertible Senior Notes bear cash interest at the rate of 7.00% per annum, payable semi-annually in arrears on June 1 and December 1 of each year, beginning on June 1, 2024, to holders of record at the close of business on the preceding May 15 and November 15, respectively. The 7.00% Convertible Senior Notes mature on June 1, 2026, unless earlier converted or redeemed or repurchased by the Company.

The conversion rate for the 7.00% Convertible Senior Notes is initially 235.4049 shares of the Company's common stock per \$1,000 principal amount of 7.00% Convertible Senior Notes, which is equivalent to an initial conversion price of approximately \$4.25 per share of common stock, which represents a premium of approximately 20% over the last reported sale price of the Company's common stock on the Nasdaq Capital Market on March 12, 2024. The conversion rate and conversion price are subject to customary adjustments upon the occurrence of certain events. Prior to the close of business on the business day immediately preceding December 1, 2025, the 7.00% Convertible Senior Notes will be convertible at the option of the holders of the 7.00% Convertible Senior Notes only upon the satisfaction of specified conditions and during certain periods. On or after December 1, 2025 until the close of business on the second scheduled trading day immediately preceding the maturity date, the 7.00% Convertible Senior Notes will be convertible at the option of the holders of the 7.00% Convertible Senior Notes at any time regardless of these conditions. Conversions of the 7.00%

Convertible Senior Notes will be settled in cash, shares of the Company's common stock, or a combination thereof, at the Company's election.

Subject to certain exceptions and subject to certain conditions, holders of the 7.00% Convertible Senior Notes may require the Company to repurchase their 7.00% Convertible Senior Notes upon the occurrence of a "Fundamental Change" (as defined in the Indenture) prior to maturity for cash at a repurchase price equal to 100% of the principal amount of the 7.00% Convertible Senior Notes to be repurchased plus accrued and unpaid interest, if any, to, but excluding, the repurchase date.

The 7.00% Convertible Senior Notes will be redeemable, in whole or in part, at the Company's option at any time on or after June 5, 2025, at a cash redemption price equal to the principal amount of the 7.00% Convertible Senior Notes to be redeemed, plus accrued and unpaid interest, if any, to, but excluding, the redemption date, but only if the last reported sale price per share of the Company's common stock exceeds 130% of the then-applicable 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.

In certain circumstances, conversions of 7.00% Convertible Senior Notes in connection with "Make-Whole Fundamental Changes" (as defined in the Indenture) or conversions of 7.00% Convertible Senior Notes called for redemption may result in an increase to the conversion rate, provided that the conversion rate will not exceed 282.4859 shares of the Company's common stock per \$1,000 principal amount of 7.00% Convertible Senior Notes, subject to adjustment. In such circumstance, a maximum of 39,659,890 shares of common stock, subject to adjustment, may be issued upon conversion of the 7.00% Convertible Senior Notes. There were no conversions of the 7.00% Convertible Senior Notes during the year ended December 31, 2024.

The 7.00% Convertible Senior Notes consisted of the following (in thousands):

	Dece	mber 31, 2024
Principal amounts:		
Principal	\$	140,396
Unamortized debt premium, net of offering costs ⁽¹⁾		7,514
Net carrying amount	\$	147,910

⁽¹⁾ Included in the consolidated balance sheets within convertible senior notes, net and amortized over the remaining life of the notes using the effective interest rate method.

The following table summarizes the total interest expense and effective interest rate related to the 7.00% Convertible Senior Notes for the year ended December 31, 2024 (in thousands, except for the effective interest rate):

	Yea	Year ended		
	Decem	ber 31, 2024		
Interest expense	\$	7,687		
Amortization of premium		(4,085)		
Total	\$	3,602		
Effective interest rate		3.0 %		

The estimated fair value of the 7.00% Convertible Senior Notes as of December 31, 2024 was approximately \$112.5 million. The fair value estimation was primarily based on a quoted price in an active market.

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 in a private placement to qualified institutional buyers pursuant to Rule 144A under 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. On March 12, 2024, the Company exchanged \$138.8 million in aggregate principal amount of the 3.75% Convertible Senior Notes for \$140.4 million in aggregate principal amount of the Company's new 7.00%

Convertible Senior Notes due 2026. Following the exchange, approximately \$58.5 million in aggregate principal amount of the 3.75% Convertible Senior Notes remained outstanding with terms unchanged.

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:

- 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. There were no conversions of the 3.75% Convertible Senior Notes during the years ended December 31, 2024 and 2023.

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 years ended December 31, 2023 and 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):

	Dec	ember 31, 2024	Dec	ember 31, 2023
Principal amounts:				
Principal	\$	58,462	\$	197,278
Unamortized debt issuance costs ⁽¹⁾		(189)		(2,014)
Net carrying amount	\$	58,273	\$	195,264

⁽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.

The following table summarizes the total interest expense and effective interest rate related to the 3.75% Convertible Senior Notes for the year ended December 31, 2024 (in thousands, except for effective interest rate):

			Y	ear ended		
	Decem	ber 31, 2024	Decen	nber 31, 2023	Decen	nber 31, 2022
Interest expense	\$	3,335	\$	7,546	\$	7,398
Amortization of debt issuance costs		642		1,345		1,286
Total	\$	3,977	\$	8,891	\$	8,684
Effective interest rate		4.5 %	ó	4.6 %	ó	4.5 %

The estimated fair value of the 3.75% Convertible Senior Notes as of December 31, 2024 and 2023 was approximately \$44.9 million and \$213.2 million, respectively. The fair value estimation was primarily based on a quoted price in an active market.

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 sheets at the time the transactions were entered into. The book value of the 3.75% Notes Capped Call is not remeasured.

18. Stockholders' Equity

Preferred Stock

The Company has authorized 5,000,000 shares of preferred stock, par value \$0.01 per share, consisting of 170,000 shares of previously designated Series A Junior Participating Cumulative Preferred Stock and 4,830,000 shares of undesignated preferred stock. The Company's amended and restated certificate of incorporation, as amended, 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. As of December 31, 2024 and 2023, 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.

On January 17, 2024, the Company entered into the Original ATM Agreement with B. Riley, pursuant to which the Company may, from time to time, offer and sell through or to B. Riley, as sales agent or principal, shares of the Company's common stock, having an aggregate gross sales price of up to \$1.0 billion. As of February 23, 2024, the Company had \$697.9 million remained authorized for issuance under the Original ATM Agreement. On February 23, 2024, the Company amended the Original ATM Agreement to increase the amount of shares of the Company's common stock available for sale under the ATM Agreement to \$1.0 billion. As of November 7, 2024, the Company amended the ATM Agreement to increase the amount of shares of the Company's common stock available for sale under the Amended ATM Agreement to \$1.0 billion. During the year ended December 31, 2024, the Company sold 219,835,221 shares of common stock at a weighted-average sales price of \$3.08 per share for gross proceeds of \$677.2 million with related issuance costs of \$10.4 million.

On July 22, 2024, the Company sold 78,740,157 shares of its common stock at a public offering price of \$2.54 per share for net proceeds of \$191.0 million after deducting the underwriting discount and related offering expenses.

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. As of December 31, 2024, 3,000,000 of the Amazon Warrant Shares issued pursuant to the 2022 Transaction Agreement had vested.

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 19, "Warrant Transaction Agreements".

Accumulated Other Comprehensive Income/(Loss)

Accumulated other comprehensive income/(loss) is comprised of unrealized gains and losses on available-forsale securities and foreign currency translation gains and losses. Amounts reclassified from accumulated other comprehensive income/(loss) was \$0, \$12.8 million and \$0 for the years ended December 31, 2024, 2023 and 2022, respectively. The amount reclassified during the year ended December 31, 2023 was due to realized loss on available-forsale securities.

Net current-period other comprehensive income for the year ended December 31, 2024 increased due to foreign currency translation gains of \$4.3 million. Net current-period other comprehensive income for the year ended December 31, 2023 increased due to unrealized gains on available-for-sale securities of \$9.9 million, partially offset by foreign currency translation losses of \$3.5 million. Net current-period other comprehensive loss for the year ended December 31, 2022 increased due to unrealized losses on available-for-sale securities of \$20.0 million and foreign currency translation losses of \$4.5 million.

Non-controlling Interest

Our consolidated financial statements include the accounts of majority-owned subsidiaries consolidated under the variable interest model. Non-controlling interest represent the portion of equity not attributable to Plug Power Inc. and are reported as a separate component of equity on our consolidated balance sheets. Net loss and comprehensive income/(loss) for majority-owned subsidiaries are attributed to Plug Power Inc. and to non-controlling interest holders on our consolidated statements of operations and consolidated statements of comprehensive income/(loss) based on respective ownership percentages. Refer to Note 28, "Variable Interest Entities", for further information.

19. Warrant Transaction Agreements

Amazon Transaction Agreement in 2022

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

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 2022 Amazon Warrant are subject to customary antidilution adjustments.

On August 24, 2022, 1,000,000 of the 2022 Amazon Warrant Shares associated with tranche 1 vested. The warrant fair value associated with the vested shares of tranche 1 of \$20.4 million was capitalized to contract assets 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. As of December 31, 2024, the balance of the contract asset related to tranche 1 was \$16.5 million which is recorded in contract assets in the Company's consolidated balance sheets. During the second quarter of 2023, all 1,000,000 of the Amazon Warrant Shares associated with tranche 2 vested. The warrant fair value associated with the vested shares of tranche 2 was \$20.4 million and was determined on the grant date of August 24, 2022. As of December 31, 2024, the balance of the contract asset related to tranche 2 was \$16.5 million. Tranche 3 will vest over

the next \$1.0 billion of collections from Amazon and its affiliates. The grant date fair value of tranche 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. As of December 31, 2024, the balance of the contract asset related to tranche 3 was \$0.2 million. Because the exercise price has yet to be determined, if probable of vesting, 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.

As of December 31, 2024 and 2023, 3,000,000 and 2,000,000 of the 2022 Amazon Warrant Shares had vested, respectively, and none of the 2022 Amazon Warrant Shares had been exercised. The total amount of provision for common stock warrants recorded as a reduction of revenue for the 2022 Amazon Warrant during the years ended December 31, 2024, 2023 and 2022 was \$19.0 million, \$4.9 million and \$5.2 million, respectively.

Amazon Transaction Agreement in 2017

On April 4, 2017, the Company and Amazon entered into a Transaction Agreement (the "2017 Amazon Transaction Agreement"), pursuant to which the Company agreed to issue to Amazon.com NV Investment Holdings LLC, a warrant (the "2017 Amazon Warrant") to acquire up to 55,286,696 shares (the "2017 Amazon Warrant Shares") of the Company's common stock, subject to certain vesting events. 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 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. 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.

As of December 31, 2024 and 2023, all 55,286,696 of the 2017 Amazon Warrant Shares had vested and the 2017 Amazon Warrant was exercised with respect to 34,917,912 shares of the Company's common stock. 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, 2024, 2023 and 2022 was \$0.4 million, \$0.4 million and \$0.4 million, respectively.

Walmart Transaction Agreement

On July 20, 2017, the Company and Walmart entered into a Transaction Agreement (the "Walmart Transaction Agreement"), pursuant to which the Company agreed to issue to Walmart a warrant (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 was 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 the fair value of the awards and recorded as a charge against revenue. The second tranche of 29,098,260 Walmart Warrant Shares vested in four installments of 7,274,565 Walmart Warrant Shares each time Walmart 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 exercise price for the first and second tranches of Walmart Warrant Shares was \$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 the Walmart Warrant Shares is \$6.28 per share, which was determined pursuant to the terms of the Walmart Warrant as an amount equal to 90% of the 30-day volume weighted average share price of the Company's common stock as of October 30, 2023, the final vesting date of the second tranche of the Walmart Warrant Shares. 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. As of December 31, 2024, the balance of the contract asset related to the Walmart Warrant was \$2.6 million.

As of December 31, 2024 and 2023, 40,010,108 and 34,917,912 of the Walmart Warrant Shares had vested, respectively, and the Walmart Warrant was exercised with respect to 13,094,217 shares of the Company's common stock. 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, 2024, 2023 and 2022 was \$19.6 million, \$5.9 million, and \$7.1 million, respectively.

20. Revenue

Disaggregation of revenue

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

Major products/services lines	Year ended December 31,					
• •		2024		2023		2022
Sales of fuel cell systems	\$	52,110	\$	181,168	\$	207,691
Sales of hydrogen infrastructure		69,122		183,606		141,528
Sales of electrolyzers		135,504		82,611		28,463
Sales of engineered equipment		22,092		32,361		93,489
Services performed on fuel cell systems and related infrastructure		52,169		39,093		35,280
Power purchase agreements		77,842		63,731		47,183
Fuel delivered to customers and related equipment		97,882		66,246		57,196
Sales of cryogenic equipment and liquefiers		111,507		231,687		87,761
Other		10,586		10,837		2,849
Net revenue	\$	628,814	\$	891,340	\$	701,440

Contract balances

The following table provides information about accounts receivables, contract assets, and deferred revenue and contract liabilities (in thousands):

	D	ecember 31, 2024	D	ecember 31, 2023
Accounts receivable	\$	157,244	\$	243,811
Contract assets		118,015		155,989
Deferred revenue and contract liabilities		202,625		288,302

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 sheets.

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 and electrolyzer systems and solutions). 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 sheets.

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

Contract assets	Year ended			
	Dece	December 31, 2024 December 3		ember 31, 2023
Transferred to receivables from contract assets recognized at the beginning of the				
period	\$	(27,513)	\$	(94,860)
Change in contract assets related to warrants		(4,909)		14,260
Impairment		(35,118)		(2,375)
Revenue recognized and not billed as of the end of the period		29,566		134,677
Net change in contract assets	\$	(37,974)	\$	51,702

Deferred revenue and contract liabilities	Year ended					
	Dece	December 31, 2024		cember 31, 2024 December 31, 202		ember 31, 2023
Increases due to customer billings, net of amounts recognized as revenue during						
the period	\$	74,702	\$	151,965		
Change in contract liabilities related to warrants		440		440		
Revenue recognized that was included in the contract liability balance as of the						
beginning of the period		(160,819)		(94,001)		
Net change in deferred revenue and contract liabilities	\$	(85,677)	\$	58,404		

Estimated future revenue

The following table includes estimated revenue expected to be recognized in the future 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):

	Dece	As of mber 31, 2024	Expected recognition period (years)
Sales of fuel cell systems	\$	34,555	1 - 2
Sales of hydrogen installations and other infrastructure		19,425	1
Sales of electrolyzers		225,329	1 - 2
Sales of engineered equipment		2,332	1
Services performed on fuel cell systems and related infrastructure		122,900	5 - 10
Power purchase agreements		356,815	5 - 10
Fuel delivered to customers and related equipment		69,152	5 - 10
Sales of cryogenic equipment and other		60,136	1
Total estimated future revenue	\$	890,644	

21. 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. 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 2023, 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 51,400,000. Stock-based compensation costs recognized, excluding the Company's matching contributions of \$11.0 million, \$12.1 million and \$9.2 million, respectively, to the Plug Power Inc. 401(k) Savings & Retirement Plan and quarterly Board compensation, were approximately \$70.3 million, \$150.0 million and \$169.8 million for the years ended December 31, 2024, 2023 and 2022, respectively, in connection with the 2011 and 2021 Plans.

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, 2024			Dece	ember 31, 2023	Dece	mber 31, 2022
Cost of sales	\$	7,252	\$	11,079	\$	7,259
Research and development		8,406		9,532		6,369
Selling, general and administrative		54,683		129,387		156,127
	\$	70,341	\$	149,998	\$	169,755

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 12,227,935, 6,849,689 and 3,261,724 Service Stock Options granted during years ended December 31, 2024, 2023 and 2022, respectively, were as follows:

		Year ended	
	December 31, 2024	December 31, 2023	December 31, 2022
Expected term of options (years)	1 - 5	5	5
Risk free interest rate	3.48% - 4.63%	3.40% - 4.69%	1.26% - 4.34%
Volatility	85.00% - 97.82%	80.02% - 92.55%	73.38% - 85.97%

There was no expected dividend yield for the Service Stock Options granted.

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.

The following table reflects the Service Stock Option activity for the year ended December 31, 2024:

	Shares	Weighted Average Exercise Price	Weighted Average Remaining Contractual Terms	Aggregate Intrinsic Value
Options outstanding as of December 31, 2023	17,336,362	\$ 11.37	7.86	\$ 11,391
Options exercisable as of December 31, 2023	8,288,944	11.84	6.18	7,250
Options unvested as of December 31, 2023	9,047,418	10.94	9.39	4,141
Granted	12,227,935	2.25		
Exercised	(77,500)	13.40	_	_
Forfeited	(3,362,649)	15.35	_	
Options outstanding as of December 31, 2024	26,124,148	\$ 6.62	7.74	\$ 735
Options exercisable as of December 31, 2024	9,965,432	10.99	5.90	166
Options unvested as of December 31, 2024	16,158,716	\$ 3.92	8.88	\$ 569

The weighted average grant-date fair value of the Service Stock Options granted during the years ended December 31, 2024, 2023 and 2022 was \$1.63, \$4.88, and \$13.39 per share, respectively. The total intrinsic fair value of Service Stock Options exercised during the years ended December 31, 2024, 2023 and 2022 was approximately \$0.1 million, \$5.3 million and \$15.1 million. The total fair value of Service Stock Options that vested during the years ended December 31, 2024, 2023 and 2022 was \$26.0 million, \$33.1 million and \$22.6 million, respectively.

Compensation cost associated with Service Stock Options represented approximately \$21.8 million, \$31.5 million, and \$27.5 million of the total share-based payment expense recorded for the years ended December 31, 2024, 2023 and 2022, respectively. Additionally, as of December 31, 2024 there was approximately \$35.5 million of unrecognized compensation cost related to Service Stock Options to be recognized over a weighted average remaining period of 1.94 years.

Market Condition Stock Option Awards

The Company grants market condition stock options awards under the 2021 plan to the Chief Executive Officer and certain other executive officers. These market condition stock options awards 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. Up to one third (1/3) the market condition stock options awards will vest and become exercisable on each of the first three anniversaries of the grant date, provided that the volume weighted average price of the Company's common stock during any 30 consecutive trading day period in the three-year performance period following the grant date of the stock options ("VWAP") equals or exceeds certain levels.

The Company granted 2,452,500 and 500,000 market condition stock options awards on April 26, 2024 and July 31, 2024, respectively. Options that meet the market conditions will vest 1/3 on each for the first three anniversaries of the grant date. The market condition stock options awards will be deemed to have satisfied the market condition and will be eligible to be exercised if the VWAP equals \$7.50 at any point between the grant date and the third anniversary of the grant date.

Failure to achieve any of the stock price hurdles applicable to a market condition stock options awards during the three-year performance period will result in the applicable options not becoming exercisable. The market condition stock options awards have a maximum term of seven to ten years from the grant date.

Key inputs and assumptions used to estimate the fair value of market condition stock options awards 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.

The following table presents key assumptions used to estimate the fair value of the market condition stock options awards granted in 2024, 2023 and 2022:

	Year Ended December 31, 2024	Year Ended December 31, 2023	Year Ended December 31, 2022
Remaining VWAP performance period (years)	3	3	3
Risk-free interest rate	4.01% - 4.57%	3.60%	3.10%
Expected volatility	85.00% - 90.00%	75.00%	75.00%
Closing stock price on grant date	\$2.41 - \$2.47	\$7.87	\$26.38

The following table reflects the market condition stock options awards activity for the year ended December 31, 2024. Solely for the purposes of this table, the number of shares is based on participants earning the maximum number of shares underlying the market condition stock options awards (i.e., 200% of the target number of shares).

	Shares	A	Veighted Average Exercise Price	Weighted Average Remaining Contractual Terms	Aggregate Intrinsic Value
Options outstanding as of December 31, 2023	21,925,000	\$	21.32	5.27	\$ _
Options exercisable as of December 31, 2023	2,782,000		26.92	4.73	
Options unvested as of December 31, 2023	19,143,000		20.50	5.35	
Granted	2,952,500		2.42		
Exercised	_		_	_	
Forfeited	(12,311,500)		25.45	_	_
Options outstanding as of December 31, 2024	12,566,000	\$	12.83	5.07	\$ _
Options exercisable as of December 31, 2024	5,372,667		22.46	4.11	
Options unvested as of December 31, 2024	7,193,333	\$	5.63	5.78	\$ _

The weighted average grant-date fair value of market condition stock options awards granted during the years ended December 31, 2024, 2023 and 2022 was \$0.49, \$4.32 and \$9.73, respectively. There were no market condition stock options awards exercised during the years ended December 31, 2024, 2023 and 2022. The total fair value of the market condition stock options awards that vested during the years ended December 31, 2024, 2023 and 2022 was \$25.5 million, \$20.8 million and \$20.8 million, respectively.

Compensation cost associated with market condition stock options awards represented approximately \$12.9 million, \$64.0 million and \$95.7 million of the total share-based payment expense recorded for the years ended December 31, 2024, 2023 and 2022, respectively. Compensation costs associated with these awards are recognized as the requisite service period is rendered, regardless of when, if ever, the market condition is satisfied. Compensation cost for the year ended December 31, 2024 includes reversals due to forfeitures of unvested market condition stock options of during the first quarter of 2024. Forfeitures represent the expense related to awards for which the requisite service period was not met. The compensation expense reversals were offset by compensation costs of \$25.1 million during the year ended December 31, 2024. As of December 31, 2024, there was approximately \$5.9 million of unrecognized compensation cost related to market condition stock options awards to be recognized over a weighted average remaining period of 1.52 years.

As of December 31, 2024, there were 2,513,333 unvested shares underlying market condition stock options awards for which the employee requisite service period has not been rendered but are expected to vest. The aggregate intrinsic value of these unvested market condition stock options awards was \$0 as of December 31, 2024. The weighted average remaining contractual term of these unvested market condition stock options awards was 5.38 years as of December 31, 2024.

Restricted Stock and Restricted Stock Unit Awards

Restricted stock and restricted stock unit awards generally vest in equal installments over a period of one to three years. Restricted common stock and restricted stock unit 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 following table reflects the restricted stock and restricted stock unit activity during the year ended December 31, 2024 (in thousands except share amounts):

	Shares	Weighted Average Grant Date Fair Value	Aggregate Intrinsic Value
Unvested restricted stock as of December 31, 2023	6,732,884	\$ 15.66	\$ 30,298
Granted	4,052,391	2.21	_
Vested	(2,746,700)	15.43	_
Forfeited	(1,288,203)	16.89	_
Unvested restricted stock as of December 31, 2024	6,750,372	\$ 7.44	\$ 14,378

The weighted average grant-date fair value of the restricted stock and restricted stock unit awards granted during the years ended December 31, 2024, 2023 and 2022, was \$2.21, \$11.55, and \$20.28, respectively. The total fair value of restricted stock and restricted stock unit awards that vested during the years ended December 31, 2024, 2023 and 2022 was \$42.4 million, \$58.2 million, and \$36.7 million, respectively.

The Company recorded expense associated with its restricted stock and restricted stock unit awards of approximately \$35.6 million, \$54.5 million, and \$46.5 million during the years ended December 31, 2024, 2023 and 2022, respectively. Additionally, as of December 31, 2024 there was approximately \$38.7 million of unrecognized compensation cost related to restricted stock and restricted stock unit awards to be recognized over a weighted average remaining period of 1.55 years.

Included in the total unvested restricted common stock and restricted stock units as of December 31, 2024, there were 375,000 restricted common stock units outstanding with a performance target. The Company recorded expense associated with the restricted common stock units with a performance target of \$2.0 million during the year ended December 31, 2024. Additionally, as of December 31, 2024 there was \$1.1 million of unrecognized compensation cost related to the restricted common stock units outstanding with a performance target to be recognized over the weighted average period of 1.58 years.

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 4,314,747, 1,473,662, and 442,056 shares of common stock pursuant to the Plug Power Inc. 401(k) Savings & Retirement Plan during the years ended December 31, 2024, 2023 and 2022, respectively.

The Company's expense for this plan was approximately \$11.0 million, \$12.1 million, and \$9.2 million for the years ended December 31, 2024, 2023 and 2022, 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 295,090, 59,323, and 21,886 shares of common stock to non-employee directors as compensation during the years ended December 31, 2024, 2023 and 2022, 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 \$725 thousand, \$452 thousand and \$390 thousand for the years ended December 31, 2024, 2023 and 2022, respectively.

22. Income Taxes

The components of loss before income taxes and the income tax (expense) benefit for the years ended December 31, 2024, 2023, and 2022, by jurisdiction, are as follows (in thousands):

		2024			2023		2022		
	U.S.	Foreign	Total	U.S.	Foreign	Total	U.S.	Foreign	Total
Loss before income taxes	\$ (1,956,615)	\$ (150,976)	\$ (2,107,591)	\$ (1,211,796)	\$ (164,401)	\$ (1,376,197)	\$ (697,342)	\$ (25,827)	\$ (723,169)
Income tax benefit/(expense)	_	2,686	2,686	29	7,335	7,364	868	(1,707)	(839)
Net loss	\$ (1,956,615)	\$ (148,290)	\$ (2,104,905)	\$ (1,211,767)	\$ (157,066)	\$ (1,368,833)	\$ (696,474)	\$ (27,534)	\$ (724,008)

The significant components of current and deferred income tax expense (benefit) for the years ended December 31, 2024, 2023, and 2022, by jurisdiction, are as follows (in thousands):

		2024			2023		2022			
	U.S.	Foreign	Total	U.S.	Foreign	Total	U.S.	Foreign	Total	
Current income tax expense	\$ —	\$ 469	\$ 469	\$ —	\$ 1,170	\$ 1,170	\$ —	\$ 668	\$ 668	
Deferred tax (benefit)/expense	(206,649)	(8,381)	(215,030)	(100,754)	(2,618)	(103,372)	(42,705)	6,968	(35,737)	
Net operating loss carryforward generated	(194,386)	(8,452)	(202,838)	(146,174)	(17,653)	(163,827)	(92,030)	4,332	(87,698)	
Valuation allowance increase/(decrease)	401,035	13,678	414,713	246,899	11,766	258,665	133,867	(10,261)	123,606	
(Benefit)/expense for income taxes	<u>\$</u>	(2,686)	\$ (2,686)	\$ (29)	\$ (7,335)	\$ (7,364)	\$ (868)	\$ 1,707	\$ 839	

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

	2024	2023	2022
U.S. Federal statutory tax rate	(21.0)%	(21.0)%	(21.0)%
Section 162M Disallowance	0.2 %	0.7 %	1.9 %
Equity Compensation	0.5 %	0.4 %	(0.7)%
Provision to return and deferred tax asset adjustments	0.8 %	(2.1)%	4.6 %
Change in U.S. Federal/Foreign statutory tax rate	(0.1)%	(0.1)%	0.0 %
Other, net	0.4 %	0.6 %	0.6 %
Impairment of goodwill	0.0 %	3.3 %	0.0 %
Change in valuation allowance	19.1 %	<u>17.7</u> %	14.8 %
	(0.1)%	(0.5)%	0.1 %

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 asset and liability in other non-current assets and liabilities as of December 31, 2024 and 2023 of approximately \$19 thousand and \$3.2 million, respectively. Significant components of the Company's deferred tax assets and liabilities as of December 31, 2024 and 2023 are as follows (in thousands):

	U.S.		For	eign	Total		
	2024	2023	2024	2023	2024	2023	
Deferred revenue	22,951	39,241	134	142	23,085	39,383	
Interest expense	29,390	28,126	_	_	29,390	28,126	
Other reserves and accruals	69,834	57,265	318	337	70,152	57,602	
Tax credit carryforwards	24,752	20,794	_	_	24,752	20,794	
Amortization of stock-based							
compensation	42,008	44,023	_	_	42,008	44,023	
Non-compensatory warrants	6,187	2,950	_	_	6,187	2,950	
Capitalized research & development							
expenditures	67,018	82,374	_	_	67,018	82,374	
Right of use liability (operating							
leases)	71,033	41,960	_	_	71,033	41,960	
Capital loss carryforwards	2,649	1,763	_	_	2,649	1,763	
Property, plant and equipment and							
right of use assets	163,518	_	_	_	163,518	_	
Net operating loss carryforwards	638,350	443,964	33,825	25,373	672,175	469,337	
Total deferred tax asset	1,137,690	762,460	34,277	25,852	1,171,967	788,312	
Valuation allowance	(1,077,225)	(676,190)	(33,627)	(19,949)	(1,110,852)	(696,139)	
Net deferred tax assets	\$ 60,465	\$ 86,270	\$ 650	\$ 5,903	\$ 61,115	\$ 92,173	
Intangible assets	(11,940)	(27,749)	(631)	(9,088)	(12,571)	(36,837)	
Convertible debt	<u> </u>		` <u>—</u>		<u> </u>		
Right of use asset (operating leases)	(48,525)	(50,632)	_	_	(48,525)	(50,632)	
Property, plant and equipment and	` ' '	, ,			,		
right of use assets		(7,889)	_	_		(7,889)	
Deferred tax liability	\$ (60,465)	\$ (86,270)	\$ (631)	\$ (9,088)	\$ (61,096)	\$ (95,358)	
Net	\$	<u>\$</u>	\$ 19	\$ (3,185)	\$ 19	\$ (3,185)	

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, 2024 and 2023 of approximately \$1.1 billion and \$696.1 million, respectively. A reconciliation of the current year change in valuation allowance is as follows (in thousands):

	U.S.	Foreign	Total
Increase in valuation allowance for current year increase in net operating			
losses	\$ 221,635	15,193	\$ 236,828
Increase in valuation allowance for current year net increase in deferred tax			
assets other than net operating losses	179,400	_	179,400
Increase in valuation allowance due to change in tax rates		(1,515)	(1,515)
Net increase in valuation allowance	\$ 401,035	\$ 13,678	\$ 414,713

The Company has not changed its overall conclusion with respect to the need for a valuation allowance against its net deferred tax assets in the U.S., which remain fully reserved. Except for a few service entities mainly in Europe, 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. As of December 31, 2024, the Company's Netherlands subsidiary established a full valuation allowance on its deferred tax assets that 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 \$3.0 billion of U.S. net operating loss carryforwards. The NOL carryforwards available at December 31, 2024, include \$2.9 billion of NOL that was generated in 2018 through 2024, that do not expire. The remainder, if unused, will expire at various dates from 2033 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 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 2025 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 \$3.0 billion incurred in post-change years are not subject to limitation.

Approximately \$24.7 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, 2024. The remaining credit carryforwards will expire during the periods 2033 through 2042.

At December 31, 2024, the Company has unused Canadian net operating loss carryforwards of approximately \$3.5 million. The net operating loss carryforwards if unused will expire at various dates between 2041 through 2044. At December 31, 2024, the Company has no remaining Scientific Research and Experimental Development ("SR&ED") expenditures or ITC credit carryforwards.

At December 31, 2024, the Company has unused French net operating loss carryforwards of approximately \$96.3 million. The net operating loss may carry forward indefinitely or until the Company changes its activity.

At December 31, 2024, the Company has unused Netherlands net operating loss carryforwards of approximately \$41.4 million. The net operating loss may carry forward indefinitely or until the Company changes its activity.

As of December 31, 2024, 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 2021 and forward. Open tax years in the foreign jurisdictions range from 2014 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, 2024, the Company's French subsidiary was under audit for income tax years 2022 and 2023. The Company is not under audit in the U.S. or any other 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. As of December 31, 2024, we recorded a deferred tax asset of approximately \$44.8 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 Organization for Economic Co-operation and Development Inclusive Framework on Base Erosion and Profit Shifting has proposed a global minimum corporate tax rate of 15% on multi-national corporations, commonly referred to as the Pillar Two rules that has been agreed upon in principle by over 140 countries. While the United States has not

adopted the Pillar Two rules, numerous foreign countries have enacted legislation to implement the Pillar Two rules, effective beginning January 1, 2024, or are expected to enact similar legislation. As of December 31, 2024, the Company did not meet the consolidated revenue threshold and is not subject to the GloBE Rules under Pillar Two. The Company will continue to monitor the implementation of rules in the jurisdictions in which it operates.

23. Commitments and Contingencies

Restricted Cash

In connection with certain of the noted sale/leaseback agreements, cash of \$476.2 million and \$573.5 million, respectively, was required to be restricted as security as of December 31, 2024 and 2023, which will be released over the lease term. As of December 31, 2024 and 2023, the Company also had certain letters of credit backed by security deposits totaling \$276.4 million and \$370.7 million, respectively, of which \$242.7 million and \$340.0 million are security for the above noted sale/leaseback agreements, respectively, and \$33.7 million and \$30.7 million are customs related letters of credit, respectively.

As of December 31, 2024 and 2023, the Company had \$73.7 million and \$76.8 million, respectively, held in escrow related to the construction of certain hydrogen production plants.

The Company also had \$1.2 million of consideration held by our paying agent in connection with the Joule acquisition reported as restricted cash as of December 31, 2024 and 2023, with a corresponding accrued liability on the Company's consolidated balance sheets. The Company also had \$0.1 million and \$0.2 million of consideration held by our paying agent in connection with the CIS acquisition reported as restricted cash as of December 31, 2024 and 2023, respectively, with a corresponding accrued liability on the Company's consolidated balance sheets. Additionally, the Company had \$7.4 million and \$11.7 million in restricted cash as collateral resulting from the Frames acquisition as of December 31, 2024 and 2023, respectively.

Litigation

Legal matters are handled in the ordinary course of business. The outcome of any such matters, regardless of the merits, is inherently uncertain; therefore, assessing the likelihood of loss and any estimated damages is difficult and subject to considerable judgment. 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. While we are not in a position to accurately predict the outcome of any legal or other proceedings, where there is at least a reasonable possibility that a loss may be incurred, GAAP requires us to disclose an estimate of the reasonably possible loss or range of loss, if material, or make a statement that such an estimate cannot be made. Except for a \$0.6 million accrual relating to a settled matter subject to pending court approval, which has not been paid as of December 31, 2024, a reasonably possible loss or range of loss associated with any individual legal proceeding cannot be currently estimated.

Securities Litigation and Related Stockholder Derivative Litigation

2021 Securities Action and Related Derivative Litigation

One action is pending in which alleged stockholders of the Company assert claims derivatively, on the Company's behalf, based on allegations and claims that were asserted in *In re Plug Power, Inc. Securities Litigation*, No. 1:21-cv-2004 (S.D.N.Y.), an earlier putative securities class action that is no longer pending (the "2021 Securities Action"). In an opinion and order entered in August 2023, the district court dismissed the 2021 Securities Action with prejudice, and the plaintiffs in that action did not appeal.

A consolidated stockholder derivative action relating to the claims and allegations in the 2021 Securities Action is pending in the Court of Chancery for the State of Delaware, styled *In re Plug Power Inc. Stockholder Derivative Litigation*, Cons. C.A. No. 2022-0569-KSJM (Del. Ch.). By stipulation and order, the action was stayed until motions to dismiss were finally resolved in the 2021 Securities Action. On March 8, 2024, the alleged stockholder plaintiffs filed a consolidated amended complaint asserting claims against our officers Andrew J. Marsh, Paul B. Middleton, Gerard L.

Conway, Jr., and Keith Schmid, and against our current or former directors George C. McNamee, Gary K. Willis, Maureen O. Helmer, Johannes M. Roth, Gregory L. Kenausis, Lucas Schneider, and Jonathan Silver. The Company is named as nominal defendant. Primarily based on allegations in the 2021 Securities Action, the plaintiffs assert claims against the individual defendants for alleged breaches of fiduciary duty, disgorgement, and unjust enrichment based on alleged transactions in the Company's securities while allegedly in possession of material non-public information concerning (i) the Company's financial accounting prior to the announcement that the Company would need to restate certain financial statements and (ii) the potential amendment and termination of a warrant agreement between the Company and a significant customer. On May 10, 2024, the Company, as nominal defendant, and all of the individual defendants filed a motion to dismiss (a) for failure to make a pre-suit demand or to adequately allege demand futility and (b) by the individual defendants, for failure to state a claim. Oral argument on the motion was held on November 4, 2024.

2023 Securities Action and Related Derivative Litigation

A consolidated action is pending in the United States District Court for the District of Delaware asserting claims under the federal securities laws against the Company and certain of its senior officers on behalf of a putative class of purchasers of the Company's securities, styled *In re Plug Power, Inc. Securities Litigation*, No. 1:23-cv-00576-MN (the "2023 Securities Action"). The plaintiffs filed a consolidated complaint on September 28, 2023, in which they assert claims under the federal securities laws against the Company and four of its senior officers, Mr. Marsh, Mr. Middleton, Sanjay Shrestha, and former officer David Mindnich, on behalf of a putative class of purchasers of the Company's common stock between January 19, 2022 and March 1, 2023. The complaint alleges that the defendants made "materially false and/or misleading statements" about the Company's business and operations, including the Company's revenue goals for 2022, its ability to effectively manage its supply chain and product manufacturing, and its progress in construction of new hydrogen production capacity. On February 4, 2025, the Court issued an opinion and order dismissing the consolidated complaint, with leave to replead. The plaintiffs filed an amended complaint on February 25, 2025. The Company and the other defendants intend to file a motion to dismiss the amended complaint on a schedule to be negotiated.

Beginning on September 13, 2023, three separate actions were filed in the U.S. District Court for the District of Delaware and in the U.S. District Court for the Southern District of New York asserting claims derivatively, on behalf of the Company, against certain former and current Company officers and directors based on the allegations and claims in the 2023 Securities Action. Those cases have been consolidated in the District of Delaware under the caption *In re Plug Power, Inc. Stockholder Deriv. Litig.*, No. 1:23-cv-01007-MN (D. Del.). The defendants named in the constituent complaint were Mr. Marsh, Mr. Middleton, Mr. Mindnich, Martin Hull, Ms. Helmer, Mr. Kenausis, Mr. McNamee, Mr. Schneider, Mr. Silver, Mr. Willis, and current or former directors Jean Bua, Kavita Mahtani, and Kyungyeol Song. In an order entered on April 26, 2024, the Court approved the parties' stipulation to stay all proceedings until motions to dismiss have been resolved in the 2023 Securities Action.

2024 Securities Litigation

On March 22, 2024, Ete Adote filed a complaint in the United States District Court for the Northern District of New York asserting claims under the federal securities laws against the Company, Mr. Marsh, and Mr. Middleton, on behalf of an alleged class of purchasers of the Company's common stock between May 9, 2023 and January 16, 2024, styled *Adote v. Plug Power, Inc. et al.*, No. 1:24-cv-00406-MAD-DJS (N.D.N.Y.). The complaint alleges that the defendants made misstatements concerning the Company's progress in construction of new hydrogen production capacity and its ability to effectively manage its supply chain. On April 30, 2024, a second complaint asserting substantially similar claims against the same defendants, but on behalf of a putative class of purchasers of the Company's common stock between March 1, 2023 and January 16, 2024, was filed in the Northern District of New York, styled *Lee v. Plug Power, et al.*, No. 1:24;cv-0598-MAD-DJS (N.D.N.Y.). The Court has approved stipulations in both actions extending the time for all defendants to respond to any pleading until after the Court appoints lead plaintiff(s).

Other Litigation

On May 2, 2023, a lawsuit entitled *Jacob Thomas and JTurbo Engineering & Technology, LLC v. Joule Processing, LLC and Plug Power Inc.*, Case No. 4:23-cv-01615, was filed in the United States District Court for the Southern District of Texas against Joule Processing, LLC and the Company. The only claims that remain are misappropriation of trade secrets under the federal Defend Trade Secrets Act of 2016, 18 U.S.C. § 1836, misappropriation

of trade secrets under the Texas Uniform Trade Secrets Act, and breach of contract. The Parties entered into a settlement agreement that resolves this suit, and intent to file a stipulation of dismissal with prejudice by March 31, 2025.

On July 24, 2023, an action entitled *Felton v. Plug Power, Inc.*, Case No. 1:23-cv-887, was filed in the U.S. District Court for the Northern District of New York asserting claims against the Company pursuant to the New York State Human Rights Law. The complaint asserts that the plaintiff is seeking damages to redress injuries suffered as a result of harassment and discrimination on the basis of his race, together with creating a hostile work environment, and retaliation. The Company disagrees with plaintiff's representations about his time at the Company and intends to vigorously defend against his allegations. Plaintiff's counsel moved to withdraw from the case, which the court approved on March 18, 2024, and therefore plaintiff is now *pro se*. The discovery deadline was February 28, 2025.

On October 23, 2024, a case entitled *First Solar, Inc. v. Plug Power Inc.*, Index No. 655610/2024 was filed in the New York State Supreme Court, New York County, asserting a claim for breach of contract associated with a purchase order for solar panels manufactured by First Solar to be purchased by the Company. The complaint seeks monetary relief along with pre-judgment interest.

Concentrations of Credit Risk

Financial instruments that potentially subject the Company to credit risk consist principally of cash, cash equivalents, restricted cash, accounts receivable and marketable securities. Cash and restricted cash are maintained in accounts with financial institutions which, at times, may exceed the Federal depository insurance coverage of \$250 thousand. The Company has not experienced losses on these accounts and management believes, based upon the quality of the financial institutions, that the credit risk with regard to these deposits is not significant. The Company's available-for-sale securities consists primarily of investments in U.S. Treasury securities and short-term high credit quality corporate debt securities. Equity securities are comprised of fixed income and equity market index mutual funds. As of December 31, 2024 and 2023, the Company has no cash equivalents, available-for-sale securities or equity securities.

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.

As of December 31, 2024, one customer individually exceeded 10% of total consolidated accounts receivable with a balance of \$38.5 million, or 24.5%, of the Company's consolidated accounts receivable. As of December 31, 2023, one customer individually exceeded 10% of total consolidated accounts receivable with a balance of \$52.4 million, or 21.5%, of the Company's consolidated accounts receivable.

For purposes of assigning a customer to a sale/leaseback transaction completed with a financial institution, the Company considers the end user of the assets to be the ultimate customer. For the year ended December 31, 2024, two customers individually exceeded 10% of total consolidated revenues. One customer accounted for \$104.6 million, or 16.6%, and one customer accounted for \$90.9 million, or 14.4%, of total consolidated revenues. For the year ended December 31, 2023, two customers individually exceeded 10% of total consolidated revenues. One customer accounted for \$209.0 million, or 23.4%, and one customer accounted for \$97.0 million, or 10.9%, of total consolidated revenues. For the year ended December 31, 2022, three customers individually exceeded 10% of total consolidated revenues. One customer accounted for \$176.6 million, or 25.2%, one customer accounted for \$94.0 million, or 13.4%, and one customer accounted for \$88.4 million, or 12.6%, of total consolidated revenues.

Guarantee

On May 30, 2023, our joint venture, HyVia, entered into a government grant agreement with Bpifrance. As part of the agreement, our wholly-owned subsidiary, Plug Power France, was required to issue a guarantee to Bpifrance in the amount of €20.0 million through the end of January 2027. Plug Power France is liable to the extent of the guarantee for sums due to Bpifrance from HyVia under the agreement based on the difference between the total amount paid by Bpifrance and the final amount certified by HyVia and Bpifrance. As part of the agreement, there are certain milestones that HyVia is required to meet, and the nonperformance of these milestones or termination of this agreement could result in this guarantee being called upon. As of December 31, 2024, no payments related to this guarantee have been made. The

Company and Plug Power France recorded a liability of \$2.0 million related to this guarantee based on the Company's estimate of the guarantee being called upon.

Unconditional Purchase Obligations

The Company has entered into certain off-balance sheet commitments that require the future purchase of goods or services ("unconditional purchase obligations"). The Company's unconditional purchase obligations primarily consist of supplier arrangements, take or pay contracts and service agreements. For certain vendors, the Company's unconditional obligation to purchase a minimum quantity of raw materials at an agreed upon price is fixed and determinable; while certain other raw material costs will vary due to product forecasting and future economic conditions.

Future payments under non-cancelable unconditional purchase obligations with a remaining term in excess of one year as of December 31, 2024, were as follows (in thousands):

2025	\$ 40,914
2025 2026	50,782
2027	64,852
2028	_
2029	_
2030 and thereafter	
Total	 156,548

24. 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 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 based upon analysis of Plug on a total company basis, including assessments related to our incentive compensation plans. The accounting policies of the segment are the same as those described in the summary of significant accounting policies.

The information regularly provided to the CODM used to assess performance and allocate resources is the same as the Company's consolidated financial statements. The measure of segment profit or loss used by the CODM in assessing segment performance and how to allocate resources is consolidated net loss which is presented in the consolidated statements of operations. The CODM uses net loss in strategic planning, for example, decision making of whether to allocate resources towards strengthening sales channels, investing in research and development, focusing on cost-down initiatives, and/or analyzing company overhead in respect to specific products and service lines. Net loss is also used to monitor budget versus actual results and is considered in assessments related to company-wide incentive compensation. The significant segment expenses included within the segment measure of profit or loss are total costs of revenue, research and development expense, selling, general and administrative expense, and impairment expense. Other segment items are comprised of restructuring, change in fair value of contingent consideration, interest income, interest expense, other expense, net, realized loss on investments, net, change in fair value of equity securities, loss on extinguishment of convertible senior notes and debt, change in fair value of convertible senior note, loss on equity method investments, income tax benefit and net loss attributable to non-controlling interest, which are presented in the consolidated statements of operations. The CODM is not regularly provided a measure of segment assets.

The following table presents reported segment revenue, significant segment expenses, other segment items and segment measure of profit/(loss):

	Year ended					
	December 31, 2024		December 31, 2023		December 31, 2022	
Total net revenue	\$	628,814	\$	891,340	\$	701,440
Cost of revenue:						
Sales of equipment, related infrastructure and other	\$	(696,087)	\$	(765,575)	\$	(468,057)
Services performed on fuel cell systems and related						
infrastructure		(57,766)		(75,412)		(59,365)
Provision for loss contracts related to service		(48,539)		(86,346)		(26,801)
Power purchase agreements		(216,947)		(218,936)		(144,696)
Fuel delivered to customers and related equipment		(228,827)		(246,318)		(194,255)
Other costs of revenue		(5,535)		(6,544)		(2,622)
Operating expenses:						
Research and development	\$	(77,226)	\$	(113,745)	\$	(99,579)
Selling, general and administrative		(376,110)		(422,469)		(363,929)
Impairment		(949,315)		(269,494)		(5,218)
Other segment items, net ⁽¹⁾	\$	(77,163)	\$	(55,334)	\$	(60,926)
Consolidated net loss attributable to Plug Power Inc.	\$	(2,104,701)	\$	(1,368,833)	\$	(724,008)

⁽¹⁾ Included in other segment items, net are restructuring, change in fair value of contingent consideration, interest income, interest expense, other expense, net, realized loss on investments, net, change in fair value of equity securities, loss on extinguishment of convertible senior notes and debt, change in fair value of convertible senior note, loss on equity method investments, income tax benefit and net loss attributable to non-controlling interest

The revenue and long-lived assets based on geographic location are as follows (in thousands):

				Revenues				Long-Liv	ed A	ssets
		Year ended					As of			
	Decei	mber 31, 2024	Dece	mber 31, 2023	Dece	mber 31, 2022	Dec	ember 31, 2024	Dec	ember 31, 2023
United States	\$	428,215	\$	741,498	\$	545,942	\$	1,208,096	\$	1,881,042
Other foreign countries		200,599		149,842		155,498		72,208		123,646
Total	\$	628,814	\$	891,340	\$	701,440	\$	1,280,304	\$	2,004,688

25. Related Party Transactions

HyVia

As disclosed in Note 4, "Investments", on December 10, 2024 HyVia, announced that it entered into receivership proceedings opened by judgment of the Commercial Court of Versailles. HyVia was our 50/50 joint venture that manufactured and sold fuel cell powered electric light commercial vehicles ("FCE-LCVs") and supplied hydrogen fuel and fueling stations to support the FCE-LCV market, in each case primarily in Europe. For the years ended December 31, 2024, 2023 and 2022, we recognized related party revenue of \$5.0 million, \$13.9 million and \$5.2 million, respectively. As of December 31, 2024 and 2023, we had related party outstanding accounts receivable of \$0 and \$2.3 million, respectively.

SK Plug Hyverse

Our 49/51 joint venture, SK Plug Hyverse, aims to provide hydrogen fuel cell systems, hydrogen fueling stations, electrolyzers and clean hydrogen to the Korean and other selected Asian markets. For the years ended December 31, 2024, 2023 and 2022, we recognized related party revenue of \$6.4 million, \$2.3 million and \$0, respectively. As of December 31, 2024 and 2023, we had related party outstanding accounts receivable of \$3.5 million and \$1.7 million, respectively.

26. Restructuring

In February 2024, in a strategic move to enhance our financial performance and ensure long-term value creation in a competitive market, we approved a comprehensive initiative that encompassed a broad range of measures, including operational consolidation, strategic workforce adjustments, and various other cost-saving actions (the "2024 Restructuring Plan"). These measures were aimed at increasing efficiency, improving scalability, and maintaining our leadership position in the renewable energy industry. We began executing the 2024 Restructuring Plan in February 2024 and it was effectively completed during the fourth quarter of 2024.

The determination of when we accrue for involuntary termination benefits under restructuring plans depends on whether the termination benefits are provided under an ongoing benefit arrangement or under a one-time benefit arrangement. We account for involuntary termination benefits that are provided pursuant to one-time benefit arrangements in accordance with ASC 420, Exit or Disposal Cost Obligations ("ASC 420") whereas involuntary termination benefits that are part of an ongoing written or substantive plan are accounted for in accordance with ASC 712, Nonretirement Postemployment Benefits ("ASC 712"). We accrue a liability for termination benefits under ASC 420 in the period in which the plan is communicated to the employees and the plan is not expected to change significantly. For ongoing benefit arrangements, inclusive of statutory requirements, we accrue a liability for termination benefits under ASC 712 when the existing situation or set of circumstances indicates that an obligation has been incurred, it is probable the benefits will be paid, and the amount can be reasonably estimated. The restructuring charges that have been incurred but not yet paid are recorded in accrued expenses and other current liabilities in our consolidated balance sheets, as they are expected to be paid within the next twelve months.

During the year ended December 31, 2024, we incurred \$8.2 million in restructuring costs recorded as severance expenses of \$6.9 million and other restructuring costs of \$1.3 million in the restructuring financial statement line item in the consolidated statements of operations. Severance expense recorded during the year ended December 31, 2024 in accordance with ASC 420 was a result of the separation of full-time employees associated with the 2024 Restructuring Plan. As of December 31, 2024, \$0.1 million of accrued severance-related costs were included in accrued expenses in our consolidated balance sheets and are expected to be paid during 2025. For the year ended December 31, 2024, other restructuring costs were represented by (1) \$0.2 million of legal and professional services costs, and (2) \$1.1 million of other one-time employee termination benefits. As of December 31, 2024, \$28 thousand of accrued other restructuring costs were included in accrued expenses in our consolidated balance sheets and are expected to be paid during 2025.

27. Government Assistance

Government assistance represents benefits provided by federal, state, or local governments that are not subject to the scope of ASC 740. We recognize a grant when we have reasonable assurance that we will comply with the grant's conditions and that the grant will be received. Government assistance whose primary condition is the purchase, construction, or acquisition of a long-lived asset are considered asset-based assistance and are recognized as a reduction to such asset's cost-basis, which reduces future depreciation. Other government assistance not related to long-lived assets are considered income-based assistance, which are recognized as a reduction to the research and development expense financial statement line item in the consolidated statements of operations in the amounts of \$1.8 million and \$0 as of December 31, 2024 and 2023, respectively.

In August 2022, former President Biden signed the Inflation Reduction Act of 2022 ("IRA") into law. The IRA contains numerous credits and incentives that are relevant to the Company including: (i) a new Section 45V Credit for Production of Clean Hydrogen, which provides a PTC of up to \$3 per kg of qualified clean hydrogen over a 10-year credit period for the production of qualified clean hydrogen at a qualified facility in the United States; (ii) an extension and amendment of the Section 48 ITC for Qualified Fuel Cell Properties, including fuel cell technology; (iii) a new Section 48 Investment Tax Credit for Energy Storage Technologies, which expands the applicability of the investment tax credit to include standalone energy storage projects, among other things; and (iv) a new Section 48E Clean Electricity Investment Tax Credit, which provides a tax credit for investment in facilities that generate clean electricity, among other provisions.

Section 45V Credit for Production of Clean Hydrogen

Beginning in the second quarter of 2024, the Company determined that it qualifies for the clean hydrogen PTC under Section 45V of the Internal Revenue Code resulting from operation of the Company's hydrogen production plant located in Georgia. The PTC is available for qualified clean hydrogen produced and sold during the 10-year period beginning on the date the qualified clean hydrogen production facility was originally placed in service. The Company has chosen elective pay, also referred to as direct pay, for the 2024 taxable year. This election makes the PTC refundable, as the Company can receive the full value of the credit from the Internal Revenue Service. This election will apply to the 2024 taxable year and the four subsequent taxable years unless revoked. During the remaining five years of the 10-year period to receive the PTC, the Company can elect to transfer all or a portion of the PTC to a third party buyer in exchange for cash.

As the PTC is a refundable credit (i.e., a credit with a direct-pay option available), the PTC is outside the scope of ASC 740. Therefore, the Company has analogized the accounting of the PTC to accounting for government grants due to the ability to receive payment for the credit regardless of whether the Company has an income tax liability. Under a government grant model, once it is reasonably assured that the entity will comply with the conditions of the grant, the grant money should be recognized on a systematic basis over the period in which the entity recognizes the related expenses or losses for which the grant money is intended to compensate. The Company recognizes grants once it is probable that both of the following conditions will be met: (1) the Company is eligible to receive the grant and (2) the Company is able to comply with the relevant conditions of the grant.

With respect to the PTC, based on our current production, the Company expects to qualify for the full \$3 per kg credit. For the year ended December 31, 2024 the Company recognized PTC of \$4.0 million as a reduction to the fuel delivered to customers and related equipment costs of revenue financial statement line item in the consolidated statements of operations and \$4.5 million as an increase to the other assets financial statement line item in the consolidated balance sheets.

Section 48 Credit for Qualified Fuel Cell Properties of Energy Storage Technologies

As of December 31, 2024 the Company determined that it qualifies for the Section 48 ITC for Qualified Fuel Cell Properties of Energy Storage Technologies related to its hydrogen storage and liquefaction assets at its Georgia hydrogen plant. A base rate credit of 6% is available to qualified energy storage property in the year that it is placed in-service, with availability of increased credit rates if the property qualifies. The Company determined that it qualified for a rate credit of 30%. As the ITC is considered a transferable tax credit, the Company is accounting for it as a grant related to assets. Therefore, the ITC is recognized as a reduction to the Georgia hydrogen production plant's cost-basis, recognized within the "property, plant, and equipment, net" financial statement line item of the consolidated balance sheets, which will reduce future depreciation over the next 30 years. The amount of the ITC, which is recognized in the prepaid expenses, tax credits, and other current assets financial statement line item of the consolidated balance sheets as of December 31, 2024, was \$31.3 million.

28. Variable Interest Entities

Hidrogenii

Our wholly-owned subsidiary, Plug Power LA JV, LLC, created a joint venture with Niloco Hydrogen Holdings LLC, a wholly-owned subsidiary of 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 began 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.

The Company has determined Hidrogenii to be a VIE, and the Company is considered to be the VIE's primary beneficiary, as we determined we have both the power to direct the activities that most significantly impact the economic performance of the VIE and the obligation to absorb losses or the right to receive benefits that could potentially be significant to the VIE. On an ongoing basis, we are contractually obligated to certain operational capital funding. We consolidate the joint venture's results within our single consolidated reportable segment. Hidrogenii has similar risks to

those described in Item 1A, "Risk Factors", in the Company's Annual Report on Form 10-K for the year ended December 31, 2024.

The table below summarizes balances associated with Hidrogenii as reflected on our consolidated balance sheets as of December 31, 2024 (in thousands). The VIE's assets can be used to settle only the VIE's obligations and the creditors related to the VIE's liabilities have no recourse against the general credit of the Company.

	December 31, 2024	
Assets		
Cash and cash equivalents	\$ 667	
Prepaid expenses, tax credits and other current assets	242	
Total current assets	909	
Property, plant, and equipment, net	147,696	
Other assets		
Total non-current assets	147,696	
Total assets	148,605	
Liabilities		
Accounts payable	\$ 1,340	
Accrued expenses	27_	
Total liabilities	1,367	
Equity		
Equity	\$ 147,238	
Total equity	147,238	
Total liabilities and equity	\$ 148,605	

29. Subsequent Events

2025 Restructuring Plan

On March 3, 2025, the Company announced the 2025 Restructuring Plan. The 2025 Restructuring Plan includes initiatives to reduce our workforce, realign the Company's manufacturing footprint and streamline the organization to enhance operational efficiency and improve overall liquidity. The expected annual savings from the 2025 Restructuring Plan are expected to be significant and will begin to be realized beginning in the second half of 2025.

Standby Equity Purchase Agreement

On February 10, 2025, Plug Power Inc. (the "Company") entered into that certain Standby Equity Purchase Agreement (the "Purchase Agreement") with YA II PN, LTD, an investment fund managed by Yorkville Advisors Global, LP. (the "Investor"), pursuant to which the Company has the right to sell to the Investor up to \$1 billion in the aggregate gross sales price (the "Commitment Amount") of its common stock, par value \$0.01 per share (the "Common Stock"), subject to certain limitations and conditions set forth in the Purchase Agreement. The Company is under no obligation to sell any of its Common Stock to the Investor under the Purchase Agreement. Upon the satisfaction of the conditions to the Investor's purchase obligation set forth in the Purchase Agreement, including having an effective registration statement and a prospectus supplement registering the resale of the Common Stock issuable under the Purchase Agreement on file with the Securities and Exchange Commission, the Company will have the right, but not the obligation, from time to time at its discretion (until the Purchase Agreement is terminated) to direct the Investor to purchase a specified number of shares of Common Stock (in each case, an "Advance"), up to \$10.0 million per day, by delivering written notice to the Investor. The Common Stock purchased pursuant to an Advance delivered by the Company will be purchased at a price equal to 95% of the daily volume weighted average price of the Common Stock.

The Company will control the timing and amount of any sales of Common Stock to the Investor. Actual sales of Common Stock to the Investor under the Purchase Agreement will depend on a variety of factors to be determined by the Company and its management from time to time, which may include, among other things, market conditions, the trading price of the Common Stock and determinations by the Company and its management as to the appropriate sources of funding for the Company's business and operations.

Unless earlier terminated, the Purchase Agreement will automatically terminate upon the earliest to occur of (i) February 10, 2027 and (ii) the date on which all shares of Common Stock equal to the Commitment Amount have been issued and sold under the Purchase Agreement. Neither the Company nor the Investor may assign its rights and obligations under the Purchase Agreement without the prior written consent of the other party, and no provision of the Purchase Agreement may be modified by the Company or the Investor other than by an instrument in writing signed by both parties.

As consideration for the Investor's commitment to purchase the Common Stock pursuant to the Purchase Agreement, the Company paid the Investor a commitment fee in the amount of \$1,000,000.

The net proceeds under the Purchase Agreement to the Company will depend on the frequency and prices at which the Company sells its Common Stock to the Investor. The Company expects that any proceeds received from such sales to the Investor will be used for working capital and general corporate purposes.

ITC Sale

On January 24, 2025, the Company transferred its ITC via sale to a third party for \$31.3 million in cash.

Finalized DOE Loan Guarantee

As previously announced, on May 14, 2024, the U.S. Department of Energy (the "DOE") issued a conditional commitment letter to Plug Power Inc. (the "Company") and Plug Power Energy Loan Borrower LLC (the "Borrower"), a wholly owned indirect subsidiary of the Company, for a loan guarantee of up to \$1.66 billion through the DOE's Loan Programs Office (the "DOE Loan Program") to finance the development, construction, and ownership of up to six green hydrogen production facilities (each a "Facility" and, together, the "Facilities").

On January 16, 2025, (i) the Borrower, the DOE, acting by and through the Secretary of Energy, and the Federal Financing Bank (the "FFB") entered into a Note Purchase Agreement (the "FFB Note Purchase Agreement") in respect of which, among other things, the DOE provided a guarantee of (x) the Borrower's obligations to repay term loan borrowings and capitalized interest (such loans and capitalized interest, collectively, the "Guaranteed Loan") provided by the FFB to the Borrower and evidenced by an initial future advance promissory note (the "FFB Promissory Note") and (y) the Borrower's other obligations owing to FFB in respect of the Guaranteed Loan and (ii) in connection and concurrently therewith, the Borrower and Plug Power Limestone, LLC (the "Limestone Project Company"), a wholly owned indirect subsidiary of the Company, entered into a Loan Guarantee Agreement (the "DOE Loan Guarantee Agreement") with the DOE.

6.00% Convertible Debenture Conversions

As disclosed in Note 17, "Convertible Senior Notes", the Investor will be permitted to convert up to \$22.5 million aggregate principal amount of the 6.00% Convertible Debenture each calendar month beginning in December 2024. The Investor has converted \$22.5 million in both January and February 2025, which the Company paid in cash to the Investor. Additionally, under the terms of the Debenture Purchase Agreement, the Investor converted \$30.0 million of the 6.00% Convertible Debenture during January 2025, resulting in the Company issuing 10,440,906 shares of common stock to the Investor.

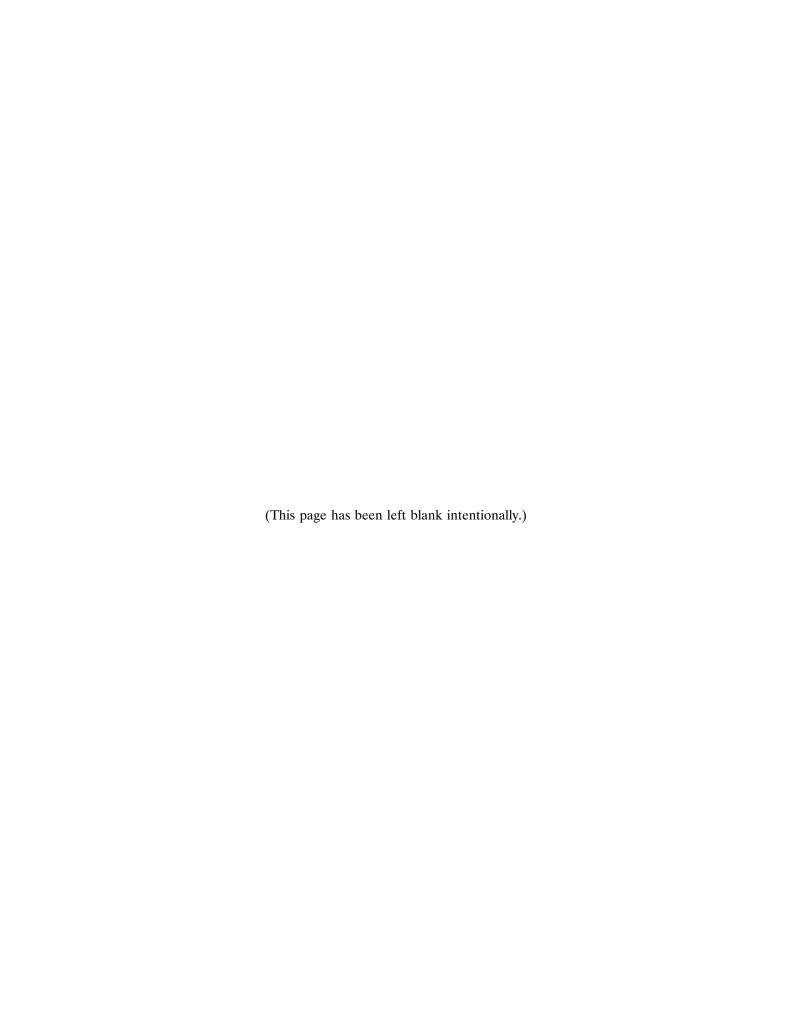
SIGNATURES

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 3, 2025



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, 2024, a "significant subsidiary" as that term is defined in Rule 1-02(w) of Regulation S-X.

Plug Power Europe SAS
Plug Power Hydrogen Holdings, Inc. (incorporated in Delaware)
Joule Processing, LLC (incorporated in Texas)
United Hydrogen Group, Inc. (incorporated in Delaware)
Applied Cryo Technologies, Inc. (incorporated in Texas)
Frames Holding BV (incorporated in Netherlands)

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in Registration Statement No. 333-265488 on Form S-3 and Registration Statement Nos. 333-258797, 333-267508, 333-274250 and 333-274249 on Form S-8 of our reports dated March 3, 2025, 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, 2024.

/s/ Deloitte & Touche LLP

Rochester, NY

March 3, 2025

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 3, 2025	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 3, 2025	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, 2024 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 3, 2025

CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

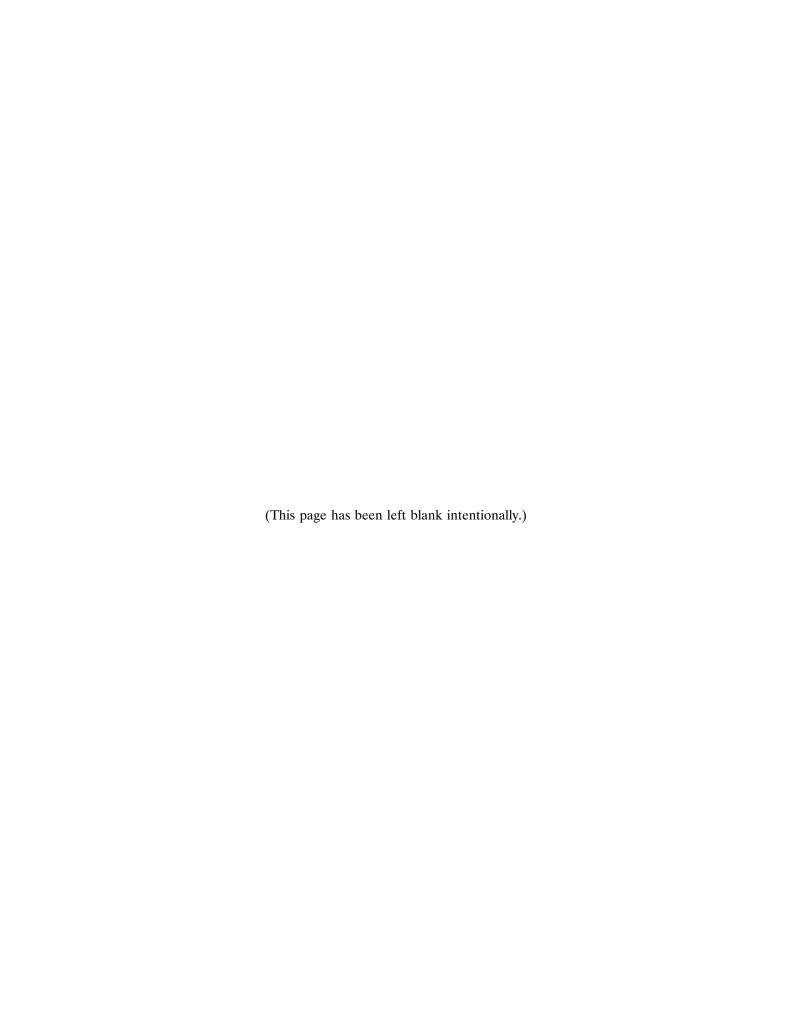
In connection with the Annual Report of Plug Power Inc. (the "Company") on Form 10-K for the period ended December 31, 2024 as filed with the Securities and Exchange Commission (the "SEC") on the date hereof (the "Report"), I, Paul B. Middleton, Chief Financial Officer of the Company, certify, solely pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002 ("§ 906"), that to my knowledge:

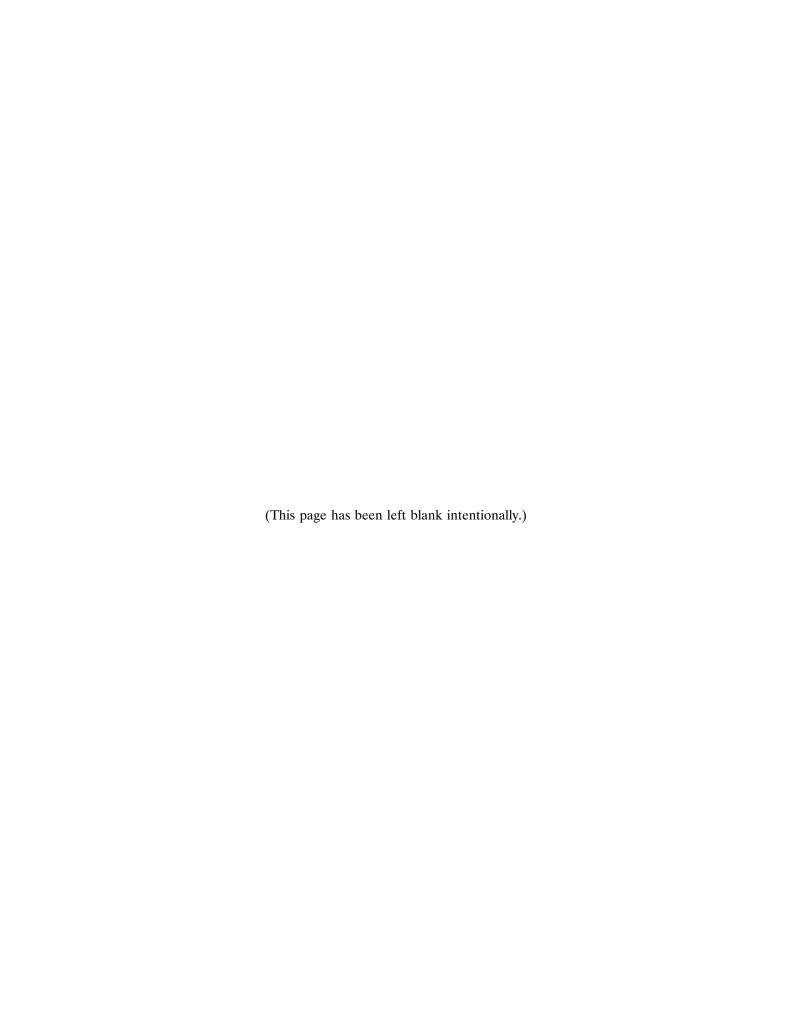
- (1) The Report fully complies with the requirements of Section 13(a) or 15(d), as applicable, of the Securities Exchange Act of 1934, as amended; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

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 3, 2025





CORPORATE INFORMATION

BOARD OF DIRECTORS

Colin Angle

Former Chief Executive Officer of iRobot Corporation

Mark J. Bonney

President and Chief Executive Officer, On Board Advisors, LLC

Maureen O. Helmer

Attorney at Law

Patrick Joggerst

Founder and Principal, J21 Consulting Group

Gregory L. Kenausis

Founding Partner and Chief Investment Officer of Grand Haven Capital AG

Kavita Mahtani

Chief Financial Officer, HSBC Bank plc

Andrew J. Marsh

Chief Executive Officer at Plug Power Inc.

George C. McNamee

Former Chairman of First Albany Companies Inc. and Managing Partner of FA Tech Ventures

Gary K. Willis

Former President of Zygo Corporation

EXECUTIVE OFFICERS

Andrew J. Marsh

Chief Executive Officer

Sanjay K. Shrestha

President

Paul B. Middleton

Chief Financial Officer, Chief Accounting Officer and Executive Vice President

Dean C. Fullerton

Chief Operating Officer

Gerard L. Conway, Jr.

General Counsel, Corporate Secretary and Executive Vice President

Jose Luis Crespo

Chief Revenue Officer

CORPORATE HEADQUARTERS

125 Vista Boulevard, Slingerlands, New York 12159

INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

Deloitte & Touche LLP

TRANSFER AGENT

Broadridge Corporate Issuer Solutions, Inc. P.O. Box 1342, Brentwood, NY

INVESTOR RELATIONS CONTACT

investors@plugpower.com