Table of Contents

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-Q

(Mark One)

☒ **QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

FOR THE QUARTERLY PERIOD ENDED March 31, 2022

OR

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

FOR THE TRANSITION PERIOD FROM TO

Commission File Number: 1-34392

PLUG POWER INC.

(Exact name of registrant as specified in its charter)

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

968 ALBANY SHAKER ROAD, LATHAM, NEW YORK 12110
(Address of Principal Executive Offices, including Zip Code)

(518) 782-7700
(Registrant's telephone number, including area code)

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

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

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

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

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

Large accelerated filer ☒	Accelerated filer ☐	Non-accelerated filer ☐	Smaller reporting company ☐	Emerging growth company ☐

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

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

The number of shares of common stock, par value of $0.01 per share, outstanding as of May 5, 2022 was 578,101,564.

INDEX to FORM 10-Q

PART 1. FINANCIAL INFORMATION

Item 1 — Interim Financial Statements (Unaudited)

Plug Power Inc. and Subsidiaries
Condensed Consolidated Balance Sheets
(In thousands, except share and per share amounts)
(Unaudited)

	March 31, 2022	December 31, 2021
Assets		
Current assets:		
Cash and cash equivalents	$ 2,495,614	$ 2,481,269
Restricted cash	140,117	118,633
Available-for-sale securities, at fair value (amortized cost $816,976 and allowance for credit losses of $0 at March 31, 2022 and amortized cost $1,242,933 and allowance for credit losses of $0 at December 31, 2021)	799,228	1,240,265
Equity securities	147,826	147,995
Accounts receivable	57,322	92,675
Inventory	333,379	269,163
Contract assets	38,645	38,637
Prepaid expenses and other current assets	87,763	59,888
Total current assets	4,099,894	4,448,525
Restricted cash	542,851	532,292
Property, plant, and equipment, net	324,653	255,623
Right of use assets related to finance leases, net	40,068	32,494
Right of use assets related to operating leases, net	229,508	212,537
Equipment related to power purchase agreements and fuel delivered to customers, net	77,559	72,902
Contract assets	68	120
Goodwill	232,031	220,436
Intangible assets, net	212,407	158,208
Investments in non-consolidated entities and non-marketable equity securities	41,312	12,892
Other assets	3,454	4,047
Total assets	$ 5,803,805	$ 5,950,076
Liabilities and Stockholders' Equity		
Current liabilities:		
Accounts payable	$ 78,711	$ 92,307
Accrued expenses	64,970	79,237
Deferred revenue and other contract liabilities	92,682	116,377
Operating lease liabilities	33,540	30,822
Finance lease liabilities	5,654	4,718
Finance obligations	44,337	42,040
Current portion of long-term debt	4,155	15,252
Loss accrual for service contracts and other current liabilities	34,282	39,800
Total current liabilities	358,331	420,553
Deferred revenue and other contract liabilities	62,503	66,713
Operating lease liabilities	186,151	175,635
Finance lease liabilities	30,520	24,611
Finance obligations	215,887	211,644
Convertible senior notes, net	192,949	192,633
Long-term debt	104,990	112,794
Loss accrual for service contracts and other liabilities	176,242	139,797
Total liabilities	1,327,573	1,344,380
Stockholders' equity:		
Common stock, $0.01 par value per share; 1,500,000,000 shares authorized; Issued (including shares in treasury): 595,209,356 at March 31, 2022 and 594,729,610 at December 31, 2021	5,952	5,947
Additional paid-in capital	7,116,125	7,070,710
Accumulated other comprehensive loss	(18,462)	(1,532)
Accumulated deficit	(2,553,392)	(2,396,903)
Less common stock in treasury: 17,146,337 at March 31, 2022 and 17,074,710 at December 31, 2021	(73,991)	(72,526)
Total stockholders' equity	4,476,232	4,605,696
Total liabilities and stockholders' equity	$ 5,803,805	$ 5,950,076

The accompanying notes are an integral part of these unaudited interim condensed consolidated financial statements

Plug Power Inc. and Subsidiaries
Condensed Consolidated Statements of Operations
(In thousands, except share and per share amounts)
(Unaudited)

	Three Months Ended March 31,	
	2022	2021
Net revenue:		
Sales of fuel cell systems, related infrastructure and equipment	$ 108,847	$ 46,772
Services performed on fuel cell systems and related infrastructure	8,240	6,045
Power purchase agreements	10,037	7,826
Fuel delivered to customers and related equipment	13,429	11,127
Other	251	188
Net revenue	140,804	71,958
Cost of revenue:		
Sales of fuel cell systems, related infrastructure and equipment	88,828	28,974
Services performed on fuel cell systems and related infrastructure	13,875	13,086
Provision for loss contracts related to service	2,048	1,485
Power purchase agreements	31,753	18,343
Fuel delivered to customers and related equipment	39,272	22,143
Other	377	98
Total cost of revenue	176,153	84,129
Gross loss	(35,349)	(12,171)
Operating expenses:		
Research and development	20,461	9,742
Selling, general and administrative	80,890	25,579
Change in fair value of contingent consideration	2,461	790
Total operating expenses	103,812	36,111
Operating loss	(139,161)	(48,282)
Interest income	2,054	68
Interest expense	(8,648)	(12,334)
Other expense, net	(1,309)	(198)
Realized loss on investments, net	(847)	—
Change in fair value of equity securities	(5,159)	—
Loss on equity method investments	(3,833)	—
Loss before income taxes	$ (156,903)	$ (60,746)
Income tax benefit	(414)	—
Net loss	$ (156,489)	$ (60,746)
Net loss per share:		
Basic and diluted	$ (0.27)	$ (0.12)
Weighted average number of common stock outstanding	577,866,983	513,458,287

The accompanying notes are an integral part of these unaudited interim condensed consolidated financial statements

Plug Power Inc. and Subsidiaries
Condensed Consolidated Statements of Comprehensive Loss
(In thousands)
(Unaudited)

	Three months ended March 31,	
	2022	2021
Net loss	$ (156,489)	$ (60,746)
Other comprehensive loss:		
Foreign currency translation loss	(1,850)	(1,123)
(Loss) gain in net unrealized loss on available-for-sale securities	(15,080)	92
Comprehensive loss attributable to the Company	$ (173,419)	$ (61,777)

The accompanying notes are an integral part of these unaudited interim condensed consolidated financial statements

Plug Power Inc. and Subsidiaries
Condensed Consolidated Statements of Stockholders' Equity
(In thousands, except share amounts)
(Unaudited)

	Common Stock		Additional Paid-in Capital	Accumulated Other Comprehensive Income	Treasury Stock		Accumulated Deficit	Total Stockholders' Equity
	Shares	Amount			Shares	Amount		
December 31, 2021	**594,729,610**	**$ 5,947**	**$ 7,070,710**	**$ (1,532)**	**17,074,710**	**$ (72,526)**	**$ (2,396,903)**	**$ 4,605,696**
Net loss	—	—	—	—	—	—	(156,489)	(156,489)
Other comprehensive loss	—	—	—	(16,930)	—	—	—	(16,930)
Stock-based compensation	226,221	2	43,384	—	—	—	—	43,386
Stock option exercises and issuance of common stock under restricted stock awards	253,525	3	288	—	—	—	—	291
Treasury stock acquired from employees upon exercise of stock options	—	—	—	—	71,627	(1,465)	—	(1,465)
Provision for common stock warrants	—	—	1,743	—	—	—	—	1,743
March 31, 2022	**595,209,356**	**$ 5,952**	**$ 7,116,125**	**$ (18,462)**	**17,146,337**	**$ (73,991)**	**$ (2,553,392)**	**$ 4,476,232**
December 31, 2020	**473,977,469**	**$ 4,740**	**$ 3,446,650**	**$ 2,451**	**15,926,068**	**$ (40,434)**	**$ (1,946,488)**	**$ 1,466,919**
Net loss	—	—	—	—	—	—	(60,746)	(60,746)
Cumulative impact of Accounting Standards Update 2020-06 adoption	—	—	(130,249)	—	—	—	9,550	(120,699)
Other comprehensive gain	—	—	—	(1,031)	—	—	—	(1,031)
Stock-based compensation	15,166	—	9,695	—	—	—	—	9,695
Public offerings, common stock, net	32,200,000	322	2,022,866	—	—	—	—	2,023,188
Private offerings, common stock, net	54,966,188	549	1,564,088	—	—	—	—	1,564,637
Stock option exercises	1,758,375	18	4,691	—	—	—	—	4,709
Exercise of warrants	16,308,978	163	15,282	—	—	—	—	15,445
Provision for common stock warrants	—	—	1,601	—	—	—	—	1,601
Conversion of 7.5% Convertible Senior Note	3,016,036	30	15,155	—	—	—	—	15,185
Repurchase of 5.5% Convertible Senior Notes, net of income tax benefit	69,808	1	159	—	—	—	—	160
March 31, 2021	**582,312,020**	**$ 5,823**	**$ 6,949,938**	**$ 1,420**	**15,926,068**	**$ (40,434)**	**$ (1,997,684)**	**$ 4,919,063**

The accompanying notes are an integral part of these unaudited interim condensed consolidated financial statements

Plug Power Inc. and Subsidiaries
Condensed Consolidated Statements of Cash Flows
(In thousands)
(Unaudited)

	Three months ended March 31,	
	2022	**2021**
Operating activities		
Net loss	$ (156,489)	$ (60,746)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation of long-lived assets	2,842	5,514
Amortization of intangible assets	5,190	364
Stock-based compensation	43,386	9,695
Amortization of debt issuance costs and discount on convertible senior notes	661	1,092
Provision for common stock warrants	1,852	1,705
Deferred income tax expense	(414)	—
Benefit on service contracts	(7,297)	(361)
Fair value adjustment to contingent consideration	(2,461)	(790)
Net realized loss on investments	847	—
Amortization of premium on available-for-sale securities	2,290	—
Lease origination costs	(1,613)	—
Change in fair value for equity securities	5,159	—
Loss on equity method investments	3,833	—
Changes in operating assets and liabilities that provide (use) cash:		
Accounts receivable	36,170	109
Inventory	(63,702)	(46,791)
Contract assets	44	—
Prepaid expenses and other assets	(27,107)	(4,641)
Accounts payable, accrued expenses, and other liabilities	(25,096)	(23,516)
Deferred revenue and other contract liabilities	(28,014)	1,267
Net cash used in operating activities	(209,919)	(117,099)
Investing activities		
Purchases of property, plant and equipment	(78,394)	(9,879)
Purchases of equipment related to power purchase agreements and equipment related to fuel delivered to customers	(6,796)	(3,332)
Purchase of available-for-sale securities	(114,173)	(405,168)
Proceeds from sales of available-for-sale securities	469,563	—
Proceeds from maturities of available-for-sale securities	67,430	—
Purchase of equity securities	(4,990)	—
Net cash paid for acquisitions	(26,473)	—
Cash paid for non-consolidated entities and non-marketable equity securities	(32,253)	—
Net cash provided by (used in) investing activities	273,914	(418,379)
Financing activities		
Proceeds from exercise of warrants, net of transaction costs	—	15,445
Payments of contingent consideration	(2,667)	—
Proceeds from public and private offerings, net of transaction costs	—	3,587,825
Payments of tax withholding on behalf of employees for net stock settlement of stock-based compensation	(1,465)	—
Proceeds from exercise of stock options	291	4,709
Principal payments on long-term debt	(19,246)	(14,461)
Proceeds from finance obligations	17,273	10,661
Principal repayments of finance obligations and finance leases	(12,427)	(9,806)
Net cash (used in) provided by financing activities	(18,241)	3,594,373
Effect of exchange rate changes on cash	634	(51)
Increase in cash and cash equivalents	14,345	3,036,663
Increase in restricted cash	32,043	22,181
Cash, cash equivalents, and restricted cash beginning of period	3,132,194	1,634,284
Cash, cash equivalents, and restricted cash end of period	$ 3,178,582	$ 4,693,128
Supplemental disclosure of cash flow information		
Cash paid for interest, net capitalized interest of $4.3 million	$ 5,731	$ 2,608
Summary of non-cash activity		
Recognition of right of use asset - finance leases	$ 8,070	$ 5,292
Recognition of right of use asset - operating leases	20,070	12,720
Net tangible assets (liabilities) acquired (assumed) in a business combination	56,929	—
Intangible assets acquired in a business combination	60,522	—
Conversion of convertible senior notes to common stock	—	15,345
Net transfers between inventory and long-lived assets	489	—
Accrued purchase of fixed assets, cash to be paid in subsequent period	6,707	—

The accompanying notes are an integral part of these unaudited interim condensed consolidated financial statements

1. Nature of Operations

Plug Power Inc. (the "Company," "Plug," "we" or "our") 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 to replace lead-acid and lithium batteries in electric material handling vehicles and industrial trucks for some of the world's largest retail-distribution and manufacturing businesses, we have expanded our offerings to support a variety of commercial operations that can be powered with green hydrogen. We also provide electrolyzers that allow customers — such as refineries, producers of chemicals, steel and fertilizer and commercial refueling stations — to generate hydrogen on-site. Additionally, we intend for our electrolyzers to be used to generate green hydrogen within Plug's own plants that will then be sold to customers. We are focusing our efforts on industrial mobility applications, including electric forklifts and electric industrial vehicles, at multi-shift high volume manufacturing and high throughput distribution sites where we believe our products and services provide a unique combination of productivity, flexibility, and environmental benefits. Additionally, we manufacture and sell fuel cell products to replace batteries and diesel generators in stationary back-up power applications for telecommunications, transportation, and utility customers. Plug supports these markets with an ecosystem of integrated products that make, transport, handle, dispense and use hydrogen.

2. Summary of Significant Accounting Policies

Principles of Consolidation

The unaudited interim condensed 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 HyVia, AccionaPlug S.L., and HALO Hydrogen Co, Ltd., 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., and HALO Hydrogen Co, Ltd.

Interim Financial Statements

The accompanying unaudited interim condensed consolidated financial statements have been prepared pursuant to the rules and regulations of the Securities and Exchange Commission ("SEC"). In the opinion of management, all adjustments, which consist solely of normal recurring adjustments, necessary to present fairly, in accordance with U.S. generally accepted accounting principles ("GAAP"), the financial position, results of operations and cash flows for all periods presented, have been made. The results of operations for the interim periods presented are not necessarily indicative of the results that may be expected for the full year.

Certain information and footnote disclosures normally included in annual consolidated financial statements prepared in accordance with GAAP have been condensed or omitted. These unaudited interim condensed consolidated financial statements should be read in conjunction with the Company's audited consolidated financial statements and notes thereto included in the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2021 (the "2021 Form 10-K").

The information presented in the accompanying unaudited interim condensed consolidated balance sheets as of December 31, 2021 has been derived from the Company's December 31, 2021 audited consolidated financial statements.

The unaudited condensed consolidated financial statements contained herein should be read in conjunction with our 2021 Form 10-K.

Recent Accounting Pronouncements

Recently Adopted Accounting Guidance

Other than the adoption of the accounting guidance mentioned in our 2021 Form 10-K, there have been no other significant changes in our reported financial position or results of operations and cash flows resulting from the adoption of new accounting pronouncements.

Recent Accounting Guidance Not Yet Effective

All issued but not yet effective accounting and reporting standards as of March 31, 2022 are either not applicable to the Company or are not expected to have a material impact on the Company.

3. Acquisitions

Joule Processing LLC

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

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

Cash	$	28,140
Contingent consideration		41,732
Total consideration	$	69,872

The contingent consideration represents the estimated fair value associated with earn-out payments of up to $130 million that the sellers are eligible to receive in cash or shares of the Company's common stock (at the Company's election). Of the total earnout consideration, $90 million is related to the achievement of certain financial performance and $40 million is related to the achievement of certain internal operational milestones.

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

Current assets	$	2,672
Property, plant and equipment		493
Right of use asset		182
Identifiable intangible assets		60,522
Lease liability		(374)
Current liabilities		(2,748)
Contract liability		(3,818)
Total net assets acquired, excluding goodwill	$	56,929

The preliminary allocation of the purchase price is still considered provisional due to the finalization of the valuation for the assets acquired and liabilities assumed in relation to the Joule acquisition. Therefore, the fair values of the assets acquired and liabilities assumed are subject to change as we obtain additional information for valuation assumptions such as market demand for Joule product lines to support forecasted revenue growth and the likelihood of achieving earnout milestones during the measurement period, which will not exceed 12 months from the date of acquisition.

The fair value of the developed technology totaling $59.2 million included in the identifiable intangible assets was calculated using the multi-period excess earnings method ("MPEEM") approach which is a variant of the income approach. The basic principle of the MPEEM approach is that a single asset, in isolation, is not capable of generating cash flow for an enterprise. Several assets are brought together and exploited to generate cash flow. Therefore, to determine cash flow from the developed technology over its useful life of 15 years, one must deduct the related expenses incurred for the exploitation of other assets used for the generation of overall cash flow. The fair value of the tradename totaling $0.8 million was calculated using the relief from royalty approach which is a variant of the income approach, and was assigned a useful life of four years. The fair value of the non-compete agreements was $0.5 million with a useful life of six years.

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

In connection with the acquisition, the Company recorded on its consolidated balance sheet a liability of $41.7 million representing the fair value of contingent consideration payable, and is recorded in the unaudited condensed consolidated balance sheet in the loss accrual for service contracts and other liabilities. The fair value of this contingent consideration was remeasured as of March 31, 2022, and there was no change for the three months ended March 31, 2022.

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

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

Consideration paid	$	28,140
Contingent consideration		41,732
Less: net assets acquired		(56,929)
Total goodwill recognized	$	12,943

The acquisition of Joule contributed $1.4 million to total consolidated revenue for the three months ended March 31, 2022. Joule results are monitored by the Company and as a result, the Company determined it impractical to report net loss for the Joule acquisition for the three months ended March 31, 2022.

Applied Cryo Technologies Acquisition

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

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

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

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

The contingent consideration represents the estimated fair value associated with earn-out payments of up to $30.0 million that the sellers are eligible to receive in cash or shares of the Company's common stock (at the Company's election). Of the total earnout consideration, $15.0 million is related to financial performance, and $15.0 million is related to internal operational milestones.

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

Cash	$	1,180
Accounts receivable		4,123
Inventory		24,655
Prepaid expenses and other assets		1,506
Property, plant and equipment		4,515
Right of use asset		2,788
Identifiable intangible assets		70,484
Lease liability		(2,672)
Accounts payable, accrued expenses and other liabilities		(8,206)
Deferred tax liability		(16,541)
Deferred revenue		(12,990)
Total net assets acquired, excluding goodwill	$	68,842

The preliminary allocation of the purchase price is still considered provisional due to the tradename, technology, and customer relationship valuations. The Company continues to evaluate valuation assumptions such as the market demand for the Applied Cryo existing product lines to support forecasted revenue growth. Additionally, the Company continues to research the technology and buying power of Applied Cryo and evaluate the likelihood of achieving the additional production capacity needed in a timely manner to meet earnout milestones. Any necessary adjustments will be finalized within one year from the date of acquisition.

Identifiable intangible assets consisted of developed technology, tradename, acquired customer relationships, non-compete agreements and backlog. The fair value of the developed technology totaling $26.3 million was calculated using the relief from royalty approach which is a variant of the income approach. The application of the relief from royalty approach involves estimating the value of an intangible asset by quantifying the present value of the stream of market derived royalty payments that the owner of the intangible asset is exempted or 'relieved' from paying. The developed technology has a useful life of 15 years. The fair value of the tradename totaling $13.7 million was calculated using the relief from royalty approach with a useful life of 15 years. The fair value of the acquired customer relationships totaling $26.6 million was calculated using the MPEEM approach and has a 15 year useful life. The fair value of the acquired customer relationships was estimated by discounting the net cash flow derived from the expected revenues attributable to the acquired customer relationships. The fair value of the non-compete agreements was $1.0 million with a useful life of three years. The fair value of the customer backlog was $2.9 million with a useful life of one year.

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

Included in the purchase price consideration are contingent earn-out payments described above. Due to the nature of the earn-outs, a scenario based analysis using the probability of achieving the milestone expectations was used to value

these contingent payments. These fair value measurements were based on unobservable inputs and are considered to be level 3 financial instruments.

In connection with the acquisition, the Company recorded on its consolidated balance sheet a liability of $14.0 million representing the fair value of contingent consideration payable. The fair value of this contingent consideration was remeasured as of March 31, 2022, and was $14.1 million for the three months ended March 31, 2022, and $0.1 million was recorded in the unaudited condensed consolidated statement of operations for the three months ended March 31, 2022.

Included in Applied Cryo's total net assets acquired, excluding goodwill, were net deferred tax liabilities of $16.5 million. In connection with the acquisition of these net deferred tax liabilities, the Company reduced its valuation allowance by $16.5 million and recognized a tax benefit $16.5 million during the year ended December 31, 2021.

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

Consideration paid	$ 162,093
Less: net assets acquired	(68,842)
Total goodwill recognized	$ 93,251

The acquisition of Applied Cryo contributed $16.9 million to total consolidated revenue for the three months ended March 31, 2022. Applied Cryo results are monitored by the Company and as a result, the Company determined it impractical to report net loss for the Applied Cryo acquisition for the three months ended March 31, 2022.

Frames Holding B.V. Acquisition

On December 9, 2021, the Company acquired 100% of the outstanding shares of Frames Holding B.V. ("Frames"). Frames, a leading provider of turnkey hydrogen solutions.

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

Cash	$ 94,541
Contingent consideration	29,057
Settlement of preexisting relationship	4,263
Total consideration	$ 127,861

The contingent consideration represents the estimated fair value associated with earn-out payments of up to €30.0 million that the sellers are eligible to receive in the form of cash. The contingent consideration is related to the achievement of certain internal operational targets during the four years following the closing date and is payable in two equal installments.

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

Cash	$	45,394
Accounts receivable		17,910
Inventory		34
Prepaid expenses and other assets		3,652
Property, plant and equipment		709
Right of use asset		1,937
Contract asset		9,960
Identifiable intangible assets		50,478
Lease liability		(1,937)
Contract liability		(22,737)
Accounts payable, accrued expenses and other liabilities		(18,465)
Deferred tax liability		(4,105)
Provision for loss contracts		(2,636)
Warranty provisions		(7,566)
Total net assets acquired, excluding goodwill	$	72,628

The preliminary allocation of the purchase price is still considered provisional due to outstanding customer valuation analysis. Identifiable intangible assets consisted of developed technology, tradename, acquired customer relationships, non-compete agreements and backlog.

The fair value of the developed technology totaling $5.3 million was calculated using the relief from royalty approach which is a variant of the income approach, and it has a useful life of eight years. The fair value of the tradename totaling $11.6 million was calculated using the relief from royalty approach, and it has a useful life of eight years. The fair value of the acquired customer relationships totaling $27.2 million was calculated using the MPEEM approach which is a variant of the income approach, and it has a useful life of 17 years. The fair value of the customer relationships was estimated by discounting the net cash flow derived from the expected revenues attributable to the acquired customer relationships. The fair value of the non-compete agreements totaling $4.9 million was calculated using the with and without income approach, and it has a useful life of approximately four years. The fair value of the backlog was $1.4 million, and it has a useful life of one year.

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

In connection with the acquisition, the Company recorded on its consolidated balance sheet a liability of $29.1 million representing the fair value of contingent consideration payable. The fair value of this contingent consideration was remeasured as of March 31, 2022, and was $29.4 million for the three months ended March 31, 2022. The Company recorded an adjustment of $0.3 million for the three months ended March 31, 2022 in the unaudited interim condensed consolidated statement of operations.

Included in Frames' total net assets acquired, excluding goodwill, are net deferred tax liabilities of $4.1 million.

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

Consideration paid	$ 127,861
Less: net assets acquired	(72,628)
Total goodwill recognized	$ 55,233

The above estimates are preliminary in nature and subject to adjustments. Any necessary adjustments will be finalized within one year from the date of acquisition. Substantially all the receivables acquired are expected to be collectable. Purchased goodwill is not expected to be deductible for tax purposes.

The acquisition of Frames contributed $22.0 million to total consolidated revenue for the three months ended March 31, 2022. Frames results are monitored by the Company and as a result, the Company determined it impractical to report net loss for the Frames acquisition for the three months ended March 31, 2022.

None of the Joule, Applied Cryo Technologies, or the Frames acquisition was material to our consolidated results of operations or financial position and, therefore, pro forma financial information is not presented.

4. 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 have been sold. The following table shows the rollforward of balance in the accrual for loss contracts, including changes due to the provision for loss accrual, loss accrual from acquisition, releases to service cost of sales, and releases due to the provision for warrants (in thousands):

	Three months ended March 31, 2022	Year ended December 31, 2021
Beginning balance	$ 89,773	$ 24,013
Provision for loss accrual	2,048	71,988
Loss accrual from acquisition	—	2,636
Releases to service cost of sales	(9,345)	(8,864)
Ending balance	$ 82,476	$ 89,773

5. Earnings Per Share

Basic earnings per common stock are computed by dividing net loss attributable to common stockholders by the weighted average number of common stock outstanding during the reporting period. 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 potentially dilutive securities are summarized as follows:

	At March 31,	
	2022	2021
Stock options outstanding (1)	24,185,000	9,020,891
Restricted stock outstanding (2)	5,439,207	6,416,308
Common stock warrants (3)	80,017,181	88,264,726
Convertible Senior Notes (4)	39,170,766	39,170,766
Number of dilutive potential shares of common stock	148,812,154	142,872,691

(1) During the three months ended March 31, 2022 and 2021, the Company granted options for 451,500 and 581,000 shares of common stock, respectively.

(2) During the three months ended March 31, 2022 and 2021, the Company granted 802,500 and 555,000 restricted shares of common stock, respectively.

(3) In April 2017, the Company issued a warrant to acquire up to 55,286,696 shares of the Company's common stock as part of a transaction agreement with Amazon, subject to certain vesting events, as described in Note 12, "Warrant Transaction Agreements." The warrant had been exercised with respect to 17,461,994 and 9,214,449 shares of the Company's common stock as of March 31, 2022 and 2021, respectively.

In July 2017, the Company issued a warrant to acquire up to 55,286,696 shares of the Company's common stock as part of a transaction agreement with Walmart, subject to certain vesting events, as described in Note 12, "Warrant Transaction Agreements." The warrant had been exercised with respect to 13,094,217 shares of the Company's common stock as of March 31, 2022 and 2021.

(4) In March 2018, the Company issued $100.0 million in aggregate principal amount of the 5.5% Convertible Senior Notes due 2023 (the "5.5% Convertible Senior Notes"). In May 2020, the Company repurchased $66.3 million of the 5.5% Convertible Senior Notes and in the fourth quarter of 2020, $33.5 million of the 5.5% Convertible Senior Notes were converted into approximately 14.6 million shares of common stock. The remaining $160.0 thousand aggregate principal amount of the 5.5% Convertible Senior Notes were converted into 69,808 shares of common stock in January 2021. In September 2019, the Company issued $40.0 million in aggregate principal amount of the 7.5% Convertible Senior Note due 2023 (the "7.5% Convertible Senior Note"), which was fully converted into 16.0 million shares of common stock on July 1, 2020. In May 2020, the Company issued $212.5 million in aggregate principal amount of the 3.75% Convertible Senior Notes. There were no conversions for the three months ended March 31, 2022. For the three months ended March 31, 2021, $15.2 million of the 3.75% Convertible Senior Notes were converted, resulting in the issuance of 3,016,036 shares of common stock.

6. Inventory

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

	March 31, 2022	December 31, 2021
Raw materials and supplies - production locations	$ 247,100	$ 187,449
Raw materials and supplies - customer locations	14,301	16,294
Work-in-process	62,558	58,341
Finished goods	9,420	7,079
Inventory	$ 333,379	$ 269,163

7. Property, Plant and Equipment

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

	March 31, 2022	December 31, 2021
Land	$ 1,165	$ 1,165
Construction in progress	235,548	169,415
Leasehold improvements	2,645	2,099
Software, machinery, and equipment	116,974	112,068
Property, plant, and equipment	356,332	284,747
Less: accumulated depreciation	(31,679)	(29,124)
Property, plant, and equipment, net	$ 324,653	$ 255,623

Construction in progress is primarily comprised of construction of hydrogen production plants and the Gigafactory in Rochester, NY. Completed assets are transferred to their respective asset classes, and depreciation begins

when an asset is ready for its intended use. Interest on outstanding debt is capitalized during periods of capital asset construction and amortized over the useful lives of the related assets. During the three months ended March 31, 2022 and 2021, we capitalized $4.3 million and $0 of interest, respectively.

Depreciation expense related to property, plant and equipment was $2.6 million and $1.6 million for the three months ended March 31, 2022 and 2021, respectively.

8. Intangible Assets and Goodwill

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

	Weighted Average Amortization Period	Gross Carrying Amount	Accumulated Amortization	Total
Acquired technology	14 years	$ 104,605	$ (7,121)	$ 97,484
Dry stack electrolyzer technology	5 years	29,000	(483)	28,517
Customer relationships, Non-compete agreements, Backlog & Trademark	12 years	90,811	(4,405)	86,406
		$ 224,416	$ (12,009)	$ 212,407

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

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

The change in the gross carrying amount of the acquired technology from December 31, 2021 to March 31, 2022 was primarily due to the acquisition of Joule, the addition of the dry build electrolyzer stack related to the Giner ELX acquisition, and changes in foreign currency translation.

Amortization expense for acquired identifiable intangible assets for the three months ended March 31, 2022 and 2021 was $5.2 million and $0.4 million, respectively.

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

Remainder of 2022	$ 18,743
2023	21,189
2024	21,131
2025	20,353
2026	18,797
2027 and thereafter	112,194
Total	$ 212,407

The change in the carrying amount of goodwill for the three month period ended March 31, 2022 was as follows (in thousands):

Beginning balance at December 31, 2021	$	220,436
Acquisitions		12,943
Adjustments		(52)
Loss due to currency translation		(1,296)
Ending balance at March 31, 2022	$	232,031

9. Long-Term Debt

In March 2019, the Company entered into a loan and security agreement, as amended (the "Loan Agreement"), with Generate Lending, LLC ("Generate Capital"), providing for a secured term loan facility in the amount of $100 million (the "Term Loan Facility"). On March 31, 2022, the outstanding balance under the Term Loan Facility was $99.8 million. The carrying value of the Term Loan Facility approximates fair value.

The Loan Agreement includes covenants, limitations, and events of default customary for similar facilities. Interest and a portion of the principal amount is payable on a quarterly basis. Principal payments are funded in part by releases of restricted cash, as described in Note 19, "Commitments and Contingencies." Based on the amortization schedule as of March 31, 2022, the aforementioned loan balance under the Term Loan Facility will be fully paid by October 31, 2025. At March 31, 2022, the Company was in compliance with all debt covenants under the Term Loan Facility.

10. Convertible Senior Notes

3.75% Convertible Senior Notes

On May 18, 2020, the Company issued $200.0 million in aggregate principal amount of 3.75% Convertible Senior Notes due June 1, 2025, in a private placement to qualified institutional buyers pursuant to Rule 144A under the Securities Act of 1933, as amended (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. During the three months ended March 31, 2022, there were no conversions of the 3.75% Convertible Senior Notes.

The 3.75% Convertible Senior Notes consisted of the following (in thousands):

		March 31, 2022
Principal amounts:		
Principal	$	197,278
Unamortized debt issuance costs (1)		(4,329)
Net carrying amount	$	192,949

1) Included in the unaudited interim condensed 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 (in thousands, except for effective interest rate):

	March 31, 2022	March 31, 2021
Interest expense	$ 1,849	$ 1,897
Amortization of debt issuance costs	316	1,258
Total	2,165	3,155
Effective interest rate	4.5%	4.5%

Based on the closing price of the Company's common stock of $28.61 on March 31, 2022, the if-converted value of the notes was greater than the principal amount. The estimated fair value of the note at March 31, 2022 was approximately $1.1 billion. The fair value estimation was primarily based on an active stock exchange trade on March 30, 2022 of the 3.75% Convertible Senior Notes. See Note 15, "Fair Value Measurements," for a description of the fair value hierarchy.

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 were recorded as a reduction to additional paid-in capital in the unaudited interim condensed consolidated balance sheets.

The book value of the 3.75% Notes Capped Call is not remeasured.

Common Stock Forward

In March 2018, the Company issued $100.0 million in aggregate principal amount of the 5.5% Convertible Senior Notes due on March 15, 2023, in a private placement to qualified institutional buyers pursuant to Rule 144A under the Securities Act, which have been fully converted into shares of common stock. In connection with the issuance of the 5.5% Convertible Senior Notes, the Company entered into a forward stock purchase transaction (the "Common Stock Forward"), pursuant to which the Company agreed to purchase 14,397,906 shares of its common stock for settlement on or about March 15, 2023. On May 18, 2020, the Company amended and extended the maturity of the Common Stock Forward to June 1, 2025. The number of shares of common stock that the Company will ultimately repurchase under the Common Stock Forward is subject to customary anti-dilution adjustments. The Common Stock Forward is subject to early settlement or settlement with alternative consideration in the event of certain corporate transactions.

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

The book value of the Common Stock Forward is not remeasured.

There were no shares of common stock settled in connection with the Common Stock Forward during the three months ended March 31, 2022. During the three months ended March 31, 2021, the Common Stock Forward was partially settled and 5.9 million shares were received by the Company.

11. Stockholders' Equity

Common Stock and Warrants

In February 2021, the Company completed a sale of its common stock in connection with a strategic partnership with SK Holdings Co., Ltd. ("SK Holdings") to accelerate the use of hydrogen as an alternative energy source in Asian markets. The Company sold 54,966,188 shares of its common stock to a subsidiary of SK Holdings at a purchase price of $29.2893 per share, or an aggregate purchase price of approximately $1.6 billion.

In January and February 2021, the Company issued and sold in a registered equity offering an aggregate of 32.2 million shares of its common stock at a purchase price of $65.00 per share for net proceeds of approximately $2.0 billion.

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

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

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 12, "Warrant Transaction Agreements." At March 31, 2022 and December 31, 2021, 75,655,478 of the warrant shares had vested, and were therefore exercisable. These warrants are measured at fair value at the time of grant or modification and are classified as equity instruments on the unaudited interim condensed consolidated balance sheets.

12. Warrant Transaction Agreements

Amazon Transaction Agreement

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

The warrant had been exercised with respect to 17,461,994 shares of the Company's common stock as of both March 31, 2022 and December 31, 2021.

At December 31, 2021, all 55,286,696 of the Amazon Warrant Shares had vested. For service contracts entered into prior to December 31, 2020, the warrant charge associated with that revenue was capitalized and is subsequently amortized over the life of the service contract. The total amount of provision for common stock warrants recorded as a reduction of revenue for the Amazon Warrant during the three months ended March 31, 2022 and 2021 was $110 thousand and $104 thousand, 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 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 warrant had been exercised with respect to 13,094,217 shares of the Company's common stock as of both March 31, 2022 and December 31, 2021.

At both March 31, 2022 and December 31, 2021, 20,368,782 of the Walmart Warrant Shares had vested. The total amount of provision for common stock warrants recorded as a reduction of revenue for the Walmart Warrant during the three months ended March 31, 2022 and 2021 was $1.7 million and $1.6 million, respectively. During the three months ended March 31, 2022 and 2021, respectively, the Walmart Warrant was exercised with respect to 0 and 7,274,565 shares of common stock.

13. Revenue

Disaggregation of revenue

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

Major products/services lines

	Three months ended March 31,	
	2022	2021
Sales of fuel cell systems	$ 37,528	$ 26,419
Sales of hydrogen infrastructure	27,089	20,353
Sales of electolyzers	4,059	—
Sales of oil and gas equipment	21,968	—
Services performed on fuel cell systems and related infrastructure	8,240	6,045
Power Purchase Agreements	10,037	7,826
Fuel delivered to customers	13,429	11,127
Sales of cryogenic equipment	18,203	—
Other	251	188
Net revenue	$ 140,804	$ 71,958

Contract balances

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

	March 31, 2022	December 31, 2021
Accounts receivable	$ 57,322	$ 92,675
Contract assets	38,713	38,757
Contract liabilities	155,185	183,090

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

The contract liabilities relate to the advance consideration received from customers for services that will be recognized over time (primarily fuel cell and related infrastructure services) and advance consideration received from customers prior to delivery of products. These amounts are included within deferred revenue and other contract liabilities on the unaudited interim condensed consolidated balance sheets.

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

Contract assets	Three months ended March 31, 2022	Three months ended December 31, 2021
Transferred to receivables from contract assets recognized at the beginning of the period	$ (3,693)	$ (14,638)
Contract assets assumed as part of acquisition	—	9,960
Revenue recognized and not billed as of the end of the period	3,649	25,246
Net change in contract assets	$ (44)	$ 20,568

Contract liabilities	Three months ended March 31, 2022	Three months ended December 31, 2021
Increases due to cash received, net of amounts recognized as revenue during the period	$ 13,327	$ 182,052
Contract liabilities assumed as part of acquisitions	3,818	35,727
Revenue recognized that was included in the contract liability balance as of the beginning of the period	(45,050)	(110,974)
Net change in contract liabilities	$ (27,905)	$ 106,805

Estimated future revenue

The following table includes estimated revenue included in the backlog expected to be recognized in the future (sales of fuel cell systems and hydrogen installations are expected to be recognized as revenue within one year; sales of services and Power Purchase Agreements ("PPAs") are expected to be recognized as revenue over five to seven years) related to performance obligations that are unsatisfied (or partially unsatisfied) at the end of the reporting period, net of the provision for common stock warrants (in thousands):

	March 31, 2022
Sales of fuel cell systems	$ 16,466
Sale of hydrogen installations and other infrastructure	40,487
Sale of electrolyzers	51,267
Sales of oil and gas equipment	73,270
Services performed on fuel cell systems and related infrastructure	98,635
Power Purchase Agreements	255,929
Fuel delivered to customers and related equipment	83,796
Sale of cryogenic equipment	62,299
Total estimated future revenue	$ 682,149

Contract costs

Contract costs consist of capitalized commission fees and other expenses related to obtaining or fulfilling a contract. Capitalized contract costs at March 31, 2022 and March 31, 2021 were $0.5 million and $1.7 million, respectively.

14. Income Taxes

The Company recorded $0.4 million and $0 of income tax benefit for the three months ended March 31, 2022 and 2021, respectively. The Company has not changed its overall conclusion with respect to the need for a valuation allowance against its domestic net deferred tax assets, which remain fully reserved.

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 carry forward 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.

15. 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.

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

Financial instruments not recorded at fair value on a recurring basis include equity method investments that have not been remeasured or impaired in the current period, such as our investments in HyVia, AccionaPlug S.L., and HALO Hydrogen Co, Ltd. During the three months ended March 31, 2022, the Company contributed approximately $22.6 million to HyVia, AccionaPlug S.L. and HALO Hydrogen Co, Ltd.

Assets and liabilities measured at fair value on a recurring basis are summarized below (in thousands):

	As of March 31, 2022				
	Carrying Amount	Fair Value	Fair Value Measurements		
			Level 1	Level 2	Level 3
Assets					
Cash equivalents	$ 37,116	$ 37,116	$ 37,116	$ —	$ —
Corporate bonds	244,921	244,921	—	244,921	—
U.S. Treasuries	554,307	554,307	554,307	—	—
Equity securities	147,826	147,826	147,826	—	—
Liabilities					
Contingent consideration	103,219	103,219	—	—	103,219
Swaps and forward contracts	371	(1,165)	1,165	—	—

	As of December 31, 2021				
	Carrying Amount	Fair Value	Fair Value Measurements		
			Level 1	Level 2	Level 3
Assets					
Cash equivalents	$ 115,241	$ 115,241	$ 115,241	$ —	$ —
Corporate bonds	226,382	226,382	—	226,382	—
U.S. Treasuries	1,013,883	1,013,883	1,013,883	—	—
Equity securities	147,995	147,995	147,995	—	—
Swaps and forward contracts	70	70	70	—	—
Liabilities					
Contingent consideration	62,297	62,297	—	—	62,297
Swaps and forward contracts	981	981	981	—	—

The assets and liabilities measured at fair value on a recurring basis that have unobservable inputs and are therefore categorized as level 3 are:

Financial Instrument	Fair Value	Valuation Technique	Unobservable Input	Range (weighted average)
Contingent Consideration	$ 89,670	Scenario based method	Credit spread	12.34% - 13.77% (13.06%)
			Discount rate	13.84% - 16.06% (14.95%)
	10,400	Monte carlo simulation	Credit spread	12.50%
			Discount rate	14.63%
			Revenue volatility	57.24% (35.0%)
	3,149	Monte carlo simulation	Credit spread	13.00% - 13.08% (12.92%)
			Revenue volatility	47.7% - 25.9% (35.0%)
			Gross profit volatility	113.9% - 24.2% (70.0%)
	103,219			

The change in the carrying amount of Level 3 liabilities for the three month period ended March 31, 2022 was as follows (in thousands):

	Three months ended March 31, 2022
Beginning balance at December 31, 2021	$ 62,297
Payments	(2,667)
Additions due to acquisitions	41,732
Fair value adjustments	2,461
Gain due to currency translation	(604)
Ending balance at March 31, 2022	$ 103,219

16. Investments

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

	March 31, 2022				
	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value	Allowance for Credit Losses
Corporate bonds	$ 251,827	$ —	$ (6,906)	$ 244,921	—
U.S. Treasuries	565,149	—	(10,842)	554,307	—
Total	$ 816,976	$ —	$ (17,748)	$ 799,228	$ —

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

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

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

	March 31, 2022			
	Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
Fixed income mutual funds	$ 70,247	$ —	$ (1,772)	$ 68,475
Exchange traded mutual funds	76,000	3,351	—	79,351
Total	$ 146,247	$ 3,351	$ (1,772)	$ 147,826

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

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

A summary of the amortized cost and fair value of investments classified as available-for-sale, by contractual maturity, as of March 31, 2022 and December 31, 2021 was as follows (in thousands):

	March 31, 2022		December 31, 2021	
Maturity:	Amortized Cost	Fair Value	Amortized Cost	Fair Value
Within one year	$ 307,565	$ 305,681	$ 670,584	$ 670,306

After one through five years	509,411	493,547	572,349	569,959
Total	$ 816,976	$ 799,228	$ 1,242,933	$ 1,240,265

Accrued interest income was $3.3 million and $3.7 million at March 31, 2022 and December 31, 2021, respectively, and included within the balance for prepaid expenses and other current assets in the unaudited interim condensed consolidated balance sheets.

17. Operating and Finance Lease Liabilities

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

Leases contain termination clauses with associated penalties, the amount of which cause the likelihood of cancellation to be remote. At the end of the lease term, the leased assets may be returned to the lessor by the Company, the Company may negotiate with the lessor to purchase the assets at fair market value, or the Company may negotiate with the lessor to renew the lease at market rental rates. No residual value guarantees are contained in the leases. No financial covenants are contained within the lease; however, the lease contains customary operational covenants such as the requirement that the Company properly maintain the leased assets and carry appropriate insurance. The leases include credit support in the form of either cash, collateral or letters of credit. See Note 19, "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. The fair value of this finance obligation approximated the carrying value as of March 31, 2022.

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

	Operating Lease Liability	Finance Lease Liability	Total Lease Liabilities
Remainder of 2022	$ 42,373	$ 5,929	$ 48,302
2023	56,034	7,800	63,834
2024	54,667	7,773	62,440
2025	50,800	10,671	61,471
2026	43,515	8,039	51,554
2027 and thereafter	43,652	2,343	45,995
Total future minimum payments	291,041	42,555	333,596
Less imputed interest	(71,350)	(6,381)	(77,731)
Total	$ 219,691	$ 36,174	$ 255,865

Rental expense for all operating leases was $14.0 million and $8.0 million for the three months ended March 31, 2022 and 2021, respectively.

At March 31, 2022 and December 31, 2021, security deposits associated with sale/leaseback transactions were $3.8 million and $3.5 million, respectively, and were included in other assets in the unaudited interim condensed consolidated balance sheets.

At March 31, 2022 and December 31, 2021, the right of use assets associated with finance leases was $42.3 million and $33.9 million, respectively. The accumulated depreciation for these right of use assets was $2.2 million and $1.5 million at March 31, 2022 and December 31, 2021, respectively.

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

	Three months ended March 31, 2022	Three months ended March 31, 2021
Cash payments (in thousands)	$ 13,547	$ 6,734
Weighted average remaining lease term (years)	5.46	5.77
Weighted average discount rate	10.9%	11.6%

Finance lease costs include amortization of the right of use assets (i.e., depreciation expense) and interest on lease liabilities (i.e., interest and other expense, net in the consolidated statement of operations), and were $749 thousand and $556 thousand for the three months ended March 31, 2022, respectively.

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

	Three months ended March 31, 2022	Three months ended March 31, 2021
Cash payments (in thousands)	$ 1,868	$ 433
Weighted average remaining lease term (years)	4.44	5.10
Weighted average discount rate	6.5%	7.2%

18. Finance Obligation

The Company has sold future services to be performed associated with certain sale/leaseback transactions and recorded the balance as a finance obligation. The outstanding balance of this obligation at March 31, 2022 was $244.1 million, $40.5 million and $203.6 million of which was classified as short-term and long-term, respectively, on the accompanying unaudited interim condensed consolidated balance sheet. The outstanding balance of this obligation at December 31, 2021 was $236.6 million, $37.5 million and $199.1 million of which was classified as short-term and long-term, respectively. The amount is amortized using the effective interest method. The fair value of this finance obligation approximated the carrying value as of March 31, 2022 and December 31, 2021.

In prior periods, the Company entered into sale/leaseback transactions that were accounted for as financing transactions and reported as part of finance obligations. The outstanding balance of finance obligations related to sale/leaseback transactions at March 31, 2022 was $16.1 million, $3.8 million and $12.3 million of which was classified as short-term and long-term, respectively on the accompanying consolidated balance sheet. The outstanding balance of this obligation at December 31, 2021 was $17.0 million, $4.5 million and $12.5 million of which was classified as short-term and long-term, respectively on the accompanying consolidated balance sheets. The fair value of this finance obligation approximated the carrying value as of both March 31, 2022 and December 31, 2021.

Future minimum payments under finance obligations notes above as of March 31, 2022 were as follows (in thousands):

	Sale of Future revenue - debt	Sale/leaseback financings	Total Finance Obligations
Remainder of 2022	$ 49,193	$ 3,582	$ 52,775
2023	65,591	3,531	69,122
2024	65,591	9,286	74,877
2025	60,334	383	60,717
2026	43,611	383	43,994
2027 and thereafter	34,452	556	35,008
Total future minimum payments	318,772	17,721	336,493
Less imputed interest	(74,678)	(1,591)	(76,269)
Total	$ 244,094	$ 16,130	$ 260,224

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

	Three months ended March 31, 2022	Three months ended March 31, 2021
Cash payments (in thousands)	$ 17,409	$ 12,816
Weighted average remaining term (years)	4.91	4.90
Weighted average discount rate	10.8%	11.2%

19. Commitments and Contingencies

Restricted Cash

In connection with certain of the above noted sale/leaseback agreements, cash of $252.6 million and $275.1 million was required to be restricted as security as of March 31, 2022 and December 31, 2021, respectively, which restricted cash will be released over the lease term. As of March 31, 2022 and December 31, 2021, the Company also had certain letters of credit backed by security deposits totaling $339.7 million and $286.0 million, respectively, that are security for the above noted sale/leaseback agreements.

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

The Company also had $5.0 million of consideration held by our paying agent in connection with the Applied Cryo acquisition reported as restricted cash as of March 31, 2022, with a corresponding accrued liability on the Company's unaudited interim condensed consolidated balance sheet. Additionally, the Company had $15.3 million in restricted cash as collateral resulting from the Frames acquisition.

Litigation

Legal matters are defended and handled in the ordinary course of business. Liabilities for loss contingencies arising from claims, assessments, litigation, fines, and penalties and other sources are recorded when it is probable that a liability has been incurred and the amount can be reasonably estimated. Legal costs incurred in connection with loss contingencies are expensed as incurred. The Company has not recorded any accruals related to any legal matters.

Concentrations of Credit Risk

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.

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

At March 31, 2022, two customers comprised 30.0% of the total accounts receivable balance. At December 31, 2021, one customer comprised approximately 46.6% of the total accounts receivable balance.

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 three months ended March 31, 2022, 67.0% of total consolidated revenues were associated with five customers. For the three months ended March 31, 2021, 71.2% of total consolidated revenues were associated primarily with three customers.

20. Employee Benefit Plans

2011 and 2021 Stock Option and Incentive Plan

The Company has issued stock-based awards to employees and members of its Board of Directors (the "Board") consisting of stock options and restricted stock awards. The Company accounts for all stock-based awards to employees and members of the Board as compensation costs in the consolidated financial statements based on their fair values measured as of the date of grant. These costs are recognized over the requisite service period. Stock-based compensation costs recognized, excluding the Company's 401(k) match and quarterly board compensation, were $40.8 million and $8.5 million for the three months ended March 31, 2022 and March 31, 2021, respectively. The methods and assumptions used in the determination of the fair value of stock-based awards are consistent with those described in our 2021 Form 10-K.

Option Awards

The Company issues options that are time and performance-based awards. All option awards are determined to be classified as equity awards.

Service Stock Options Awards

The following table reflects the service stock option activity for the three months ended March 31, 2022:

	Shares	Weighted Average Exercise Price	Weighted Average Remaining Contractual Terms	Aggregate Intrinsic Value
Options outstanding at December 31, 2021	9,786,909	$ 11.65	7.7	$ 172,412
Granted	451,500	23.83	—	—
Exercised	(56,692)	5.13	—	—
Forfeited	(16,717)	13.16	—	—
Options outstanding at March 31, 2022	10,165,000	$ 12.20	7.5	$ 176,301
Options exercisable at March 31, 2022	4,900,538	5.96	6.3	114,080
Options unvested at March 31, 2022	5,264,462	$ 18.03	8.7	$ 62,221

The weighted average grant-date fair value of the service stock options granted during the three months ended March 31, 2022 and 2021 was $15.34 and $31.78, respectively. The total intrinsic fair value of service stock options exercised during the three months ended March 31, 2022 and 2021 was $1.1 million and $1.0 million, respectively. The total fair value of the service stock options that vested during the three months ended March 31, 2022 and 2021 was approximately $5.6 million and $2.9 million, respectively.

Compensation cost associated with service stock options represented approximately $5.9 million and $3.3 million of the total share-based payment expense recorded for the three months ended March 31, 2022 and 2021, respectively. As of March 31, 2022 and 2021 there was approximately $47.0 million and $40.5 million, respectively, of unrecognized compensation cost related to service stock option awards to be recognized over the weighted average remaining period of 2.13 years.

Performance Stock Option Awards

Compensation cost associated with performance stock options represented approximately $25.1 million and $0 of the total share-based payment expense recorded for the three months ended March 31, 2022 and 2021, respectively. As of March 31, 2022, there was approximately $125.1 million of unrecognized compensation cost related to performance stock option awards to be recognized over the weighted average remaining period of 2.48 years. There were no new grants of performance stock option awards for the three months ended March 31, 2022.

Restricted Stock Awards

The Company recorded expense associated with its restricted stock awards of approximately $9.8 million and $5.2 million for the three months ended March 31, 2022 and 2021, respectively. Additionally, for the three months ended March 31, 2022 and 2021, there was $83.7 million and $64.1 million, respectively, of unrecognized compensation cost related to restricted stock awards to be recognized over the weighted average period of 2.1 years.

A summary of restricted stock activity for the three months ended March 31, 2022 is as follows (in thousands except share amounts):

	Shares	Weighted Average Grant Date Fair Value	Aggregate Intrinsic Value
Unvested restricted stock at December 31, 2021	4,851,873	$ 21.59	$ —
Granted	802,500	23.86	—
Vested	(196,832)	41.93	—
Forfeited	(18,334)	13.20	—
Unvested restricted stock at March 31, 2022	5,439,207	$ 18.31	$ 155,616

The weighted average grant-date fair value of the restricted stock awards granted during the three months ended March 31, 2022 and 2021, was $3.9 million and $457 thousand, respectively. The total fair value of restricted stock awards vested for the three months ended March 31, 2022, and 2021 were $23.86 million and $43.89 million, respectively.

401(k) Savings & Retirement Plan

The Company issued 96,539 shares of common stock and 12,513 shares of common stock pursuant to the Plug Power Inc. 401(k) Savings & Retirement Plan during the three months ended March 31, 2022 and 2021, respectively.

The Company's expense for this plan was approximately $2.2 million, and $1.3 million for the three months ended March 31, 2022 and 2021, respectively.

Non-Employee Director Compensation

The Company granted 3,290 shares of common stock and 2,653 shares of common stock to non-employee directors as compensation for the three months ended March 31, 2022 and 2021, respectively. All common stock issued is fully vested at the time of issuance and is valued at fair value on the date of issuance. The Company's share-based compensation expense in connection with non-employee director compensation was approximately $94 thousand and $85 thousand for the three months ended March 31, 2022 and 2021, respectively.

21. Segment Reporting

Our organization is managed from a sales perspective on the basis of "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 fuel cells and hydrogen producing equipment. 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 Power Inc. on a total company basis, including assessments related to our incentive compensation plans.

	Revenues		Long-Lived Assets as of	
	Three Months Ended		Three Months Ended	
	March 31, 2022	March 31, 2021	March 31, 2022	December 31, 2021
North America	$ 113,678	$ 69,646	$ 665,992	$ 570,778
Other	27,126	2,312	5,796	2,778
Total	$ 140,804	$ 71,958	$ 671,788	$ 573,556

22. Subsequent Events

On April 28, 2022, the Company and Olin Corporation, a leading vertically integrated chlor alkali producer and marketer, announced the signing of a memorandum of understanding with the intention to create a joint venture to produce and market green hydrogen to support growing fuel cell demand in the global hydrogen economy.

Item 2 — Management's Discussion and Analysis of Financial Condition and Results of Operations

The following discussion should be read in conjunction with our accompanying unaudited interim condensed consolidated financial statements and notes thereto included within this report, and our audited and notes thereto included in our 2021 10-K. In addition to historical information, this Quarterly Report on Form 10-Q and the following discussion contain statements that are not historical facts and are considered forward-looking within the meaning of Section 27A of the Securities Act, and Section 21E of the 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," "projected" or the negative of such words or other similar words or phrases. We believe that it is important to communicate our future expectations to our investors. However, there may be events in the future that we are not able to accurately predict or control and that may cause our actual results to differ materially from the expectations we describe in our forward-looking statements. Investors are cautioned not to unduly rely on forward-looking statements because they involve risks and uncertainties, and actual results may differ materially from those discussed as a result of various factors, including, but not limited to:

- the risk that we continue to incur losses and might never achieve or maintain profitability;
- the risk that we will need to raise additional capital to fund our operations and such capital may not be available to us;
- the risk of dilution to our stockholders and/or stock price should we need to raise additional capital;

- the risk that our lack of extensive experience in manufacturing and marketing products may impact our ability to manufacture and market products on a profitable and large-scale commercial basis;
- the risk that unit orders may not ship, be installed and/or converted to revenue, in whole or in part;
- the risk that a loss of one or more of our major customers, or if one of our major customers delays payment of or is unable to pay its receivables, a material adverse effect could result on our financial condition;
- the risk that a sale of a significant number of shares of stock could depress the market price of our common stock;
- the risk that our convertible senior notes, if settled in cash, could have a material effect on our financial results;
- the risk that our convertible note hedges may affect the value of our convertible senior notes and our common stock;
- the risk that negative publicity related to our business or stock could result in a negative impact on our stock value and profitability;
- the risk of potential losses related to any product liability claims or contract disputes;
- the risk of loss related to an inability to remediate the material weaknesses identified in internal control over financial reporting as disclosed in this Quarterly Report on Form 10-Q, or inability to otherwise maintain an effective system of internal control;
- the risk that the restatement of our financial statements as of and for the years ended December 31, 2019 and 2018 and for each of the quarterly periods ended March 31, 2020 and 2019, June 30, 2020 and 2019, September 30, 2020 and 2019 could negatively affect investor confidence and raise reputational issues;
- the risk of loss related to an inability to maintain an effective system of internal controls;
- our ability to attract and maintain key personnel;
- the risks related to the use of flammable fuels in our products;
- the risk that pending orders may not convert to purchase orders, in whole or in part;
- the cost and timing of developing, marketing and selling our products;
- the risks of delays in or not completing our product development goals;
- the risks involved with participating in joint ventures;
- our ability to obtain financing arrangements to support the sale or leasing of our products and services to customers;
- our ability to successfully pursue new business ventures;
- our ability to achieve the forecasted gross margin on the sale of our products;
- the cost and availability of fuel and fueling infrastructures for our products;
- the risks, liabilities, and costs related to environmental, health and safety matters;
- the risk of elimination of government subsidies and economic incentives for alternative energy products;
- market acceptance of our products and services, including GenDrive, GenSure and GenKey systems;
- our ability to establish and maintain relationships with third parties with respect to product development, manufacturing, distribution and servicing, and the supply of key product components;
- the cost and availability of components and parts for our products;
- the risk that possible new tariffs or sanctions could have a material adverse effect on our business;
- our ability to develop commercially viable products;
- our ability to reduce product and manufacturing costs;
- our ability to successfully market, distribute and service our products and services internationally;
- our ability to improve system reliability for our products;
- competitive factors, such as price competition and competition from other traditional and alternative energy companies;
- our ability to protect our intellectual property;
- the risk of dependency on information technology on our operations and the failure of such technology;
- the cost of complying with current and future federal, state and international governmental regulations;
- our subjectivity to legal proceedings and legal compliance;
- the risks associated with past and potential future acquisitions;
- the risks associated with geopolitical and global economic uncertainty, including the conflict between Russia and Ukraine, inflationary pressures, rising interest rates, and supply chain disruptions; 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 discussed in the section titled "Risk Factors" included under Part I, Item 1A, in our 2021 10-K. 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 Quarterly Report on Form 10-Q.

References in this Quarterly Report on Form 10-Q to "Plug," the "Company," "we," "our" or "us" refer to Plug Power Inc., including as the context requires, its subsidiaries.

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 to replace lead-acid and lithium batteries in electric material handling vehicles and industrial trucks for some of the world's largest retail-distribution and manufacturing businesses, we have expanded our offerings to support a variety of commercial operations that can be powered with green hydrogen. We also provide electrolyzers that allow customers — such as refineries, producers of chemicals, steel and fertilizer and commercial refueling stations — to generate hydrogen on-site. Additionally, we intend for our electrolyzers to be used to generate green hydrogen within Plug's own plants that will then be sold to customers. We are focusing our efforts on industrial mobility applications, including electric forklifts and electric industrial vehicles, at multi-shift high volume manufacturing and high throughput distribution sites where we believe our products and services provide a unique combination of productivity, flexibility, and environmental benefits. Additionally, we manufacture and sell fuel cell products to replace batteries and diesel generators in stationary back-up power applications for telecommunications, transportation, and utility customers. Plug supports these markets with an ecosystem of integrated products that make, transport, handle, dispense and use hydrogen.

Our current products and services include:

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

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

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

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

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

ProGen: ProGen is our fuel cell stack and engine technology currently used globally in mobility and stationary fuel cell systems, and as engines in electric delivery vans. This includes the Plug membrane electrode assembly ("MEA"), a critical component of the fuel cell stack used in zero-emission fuel cell electric vehicle engines.

GenFuel electrolyzers: GenFuel electrolyzers 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.

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. Europe has rolled out ambitious targets for the hydrogen economy and Plug is seeking to execute on its strategy to become one of the European leaders. This includes a targeted account strategy for material handling, securing strategic partnerships with European OEMs, energy companies, utility leaders and accelerating our electrolyzer business. Our global strategy includes leveraging a network of integrators or contract manufacturers. We manufacture our commercially viable products in Latham, New York, Rochester, New York, Houston, Texas and Spokane, Washington and support liquid hydrogen generation and logistics in Charleston, Tennessee.

Part of our long-term plan includes Plug penetrating the on-road vehicle market and large-scale stationary market. Plug's formation of joint ventures with HyVia and Acciona Plug S.L. in Europe and HALO Hydrogen Co, Ltd. in Asia not only support this goal but are expected to provide us with a more global footprint. Plug has been successful with acquisitions, strategic partnerships and joint ventures, and we plan to continue this mix. For example, we expect our relationship with Apex to provide us access to low-cost renewable energy, which is critical to low-cost green hydrogen.

Recent Developments

COVID-19 Update

As a result of the COVID-19 pandemic outbreak in March 2020, state governments—including those in New York and Washington, where our manufacturing facilities are located—issued orders requiring businesses that do not conduct essential services to temporarily close their physical workplaces to employees and customers.

Starting on January 3, 2022, all U.S. based employees, including temporary employees are required to either be vaccinated against COVID-19, or be subject to weekly COVID-19 testing in an effort to stop the spread of COVID-19 and continue to protect our workforce. As of February 28, 2022, we discontinued the weekly testing for unvaccinated employees and removed the mask requirement for fully vaccinated employees. Our positive cases declined significantly; and that, combined with guidance from state and federal agencies resulted in the change in practice. We continue to monitor the situation, and remain prepared to adjust accordingly. With trends of COVID-19 continually decreasing, on March 25, 2022, we transitioned our face-covering requirement to voluntary for all employees and visitors. Additionally, we removed our daily COVID-19 questionnaire and discontinued temperature monitoring as a daily requirement at our facilities. Employees are still expected to remain home if they are not feeling well and should contact our COVID team for future guidance. Furthermore, we have resumed all commercial air travel and all other non-critical travel, while also allowing employees to resume their personal travel. We have enabled third-party access to our facilities, and are continuing our normal janitorial and sanitary procedures. We no longer are requiring staggered shifts in our manufacturing facilities and are offering hybrid work schedules to those whose job function enabled them to do so.

We cannot predict at this time the full extent to which COVID-19 will impact our business, results, and financial condition, which will depend on many factors. We are staying in close communication with our manufacturing facilities, employees, customers, suppliers, and partners, and acting to mitigate the impact of this dynamic and evolving situation, but there is no guarantee that we will be able to do so. Many of the parts for our products are sourced from suppliers in China and the manufacturing situation in China remains variable. Supply chain disruptions could reduce the availability of key components, increase prices or both, as the COVID-19 pandemic has caused significant challenges for global supply chains resulting primarily in transportation delays. These transportation delays have caused incremental freight charges, which have negatively impacted our results of operations. We expect that these challenges will continue to have an impact on our businesses for the foreseeable future. Certain of our customers, such as Walmart, significantly increased their use of units and hydrogen fuel consumption as a result of COVID-19. In the year ended December 31, 2021, our services and PPA margins were negatively impacted by incremental service costs associated with increased usage of units at some of our primary customer sites.

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

Inflation, Material Availability and Labor Shortages

In the first quarter of 2022, we experienced higher than expected commodity costs and supply chain costs, including logistics, procurement, and manufacturing costs, largely due to inflationary pressures. We expect this cost inflation to remain elevated through at least the remainder of 2022.

Our operations require significant amounts of necessary parts and raw materials. From time to time, the Company may encounter difficulties in obtaining certain raw materials or components necessary for production due to supply chain constraints and logistical challenges, which may also negatively impact the pricing of materials and components sourced or used by the Company. Additionally, conflicts abroad, such as the Russia-Ukraine conflict, may potentially contribute to issues related to supply chain disruptions and inflation impacts. While the Company does not currently anticipate any significant, broad-based difficulties in obtaining raw materials or components necessary for production, there have been supply chain and logistical challenges that have resulted in supply constraints and commodity price increases on certain raw materials and components used by the Company in production, as well as increased prices for freight and logistics, including air, sea and ground freight. Consequently, the Company may experience supply shortages for raw materials or components in the future, which could be further exacerbated by increased commodity prices as a result of additional inflationary pressures. Although we have offset a portion of these increased costs through price increases and operational efficiencies to date, there can be no assurance that we will be able to continue to do so. If we are unable to manage fluctuations through pricing actions, cost savings projects, and sourcing decisions as well as through productivity improvements, it may adversely impact our gross margins in future periods.

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

Results of Operations

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

Net revenue, cost of revenue, gross profit (loss) and gross margin percentage for the three months ended March 31, 2022 and 2021, were as follows (in thousands):

	Net Revenue	Cost of Revenue	Gross Profit/(Loss)	Gross Margin
For the period ended March 31, 2022:				
Sales of fuel cell systems, related infrastructure and equipment	$ 108,847	$ 88,828	$ 20,019	18.4 %
Services performed on fuel cell systems and related infrastructure	8,240	13,875	(5,635)	(68.4)%
Provision for loss contracts related to service	—	2,048	(2,048)	N/A
Power purchase agreements	10,037	31,753	(21,716)	(216.4)%
Fuel delivered to customers and related equipment	13,429	39,272	(25,843)	(192.5)%
Other	251	377	(126)	(50.2)%
Total	$ 140,804	$ 176,153	$ (35,349)	(25.1)%
For the period ended March 31, 2021:				
Sales of fuel cell systems, related infrastructure and equipment	$ 46,772	$ 28,974	$ 17,798	38.1 %
Services performed on fuel cell systems and related infrastructure	6,045	13,086	(7,041)	(116.5)%
Provision for loss contracts related to service	—	1,485	(1,485)	N/A
Power purchase agreements	7,826	18,343	(10,517)	(134.4)%
Fuel delivered to customers and related equipment	11,127	22,143	(11,016)	(99.0)%
Other	188	98	90	47.9 %
Total	$ 71,958	$ 84,129	$ (12,171)	(16.9)%

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

	Three months ended March 31,	
	2022	2021
Sales of fuel cell systems, related infrastructure and equipment	$ (17)	$ (27)
Services performed on fuel cell systems and related infrastructure	(150)	(140)
Power purchase agreements	(974)	(900)
Fuel delivered to customers	(711)	(638)
Total	$ (1,852)	$ (1,705)

Net Revenue

Revenue – sales of fuel cell systems, related infrastructure and equipment. Revenue from sales of fuel cell systems, related infrastructure and equipment represents revenue from the sale of our fuel cells, such as GenDrive units and GenSure stationary backup power units, as well as hydrogen fueling infrastructure referred to at the site level as hydrogen installations, electrolyzers and other equipment such as cryogenic storage equipment. Revenue from sales of fuel cell systems, related infrastructure and equipment for the three months ended March 31, 2022 increased $62.1 million, or 132.7%, to $108.9 million from $46.8 million for the three months ended March 31, 2021. The main drivers for the increase in revenue were the inclusion of revenue of acquired businesses, the mix in GenDrive units recognized as revenue and an increase in hydrogen installations. The total revenue generated by Applied Cryo, Frames and Joule was approximately $40.1 million for the three months ended March 31, 2022. There was no revenue recognized in the first quarter of 2021 related to these acquisitions. There were 1,229 GenDrive units recognized as revenue during the three months ended March 31, 2022, compared to 1,308 for the three months ended March 31, 2021. Although the number of GenDrive units recognized as revenue decreased slightly, revenue increased due to the mix of sales. There was hydrogen infrastructure revenue associated with seven hydrogen sites during the three months ended March 31, 2022, compared to six during the three months ended March 31, 2021.

Revenue – services performed on fuel cell systems and related infrastructure. Revenue from services performed on fuel cell systems and related infrastructure represents revenue earned on our service and maintenance contracts and sales of spare parts. At March 31, 2022, there were 19,409 fuel cell units and 84 hydrogen installations under extended maintenance contracts, an increase from 14,189 fuel cell units and 60 hydrogen installations at March 31, 2021. Revenue from services performed on fuel cell systems and related infrastructure for the three months ended March 31, 2022 increased $2.2 million, or 36.3%, to $8.2 million as compared to $6.0 million for the three months ended March 31, 2021.

The increase in revenue from services performed on fuel cell systems and related infrastructure for the three months ended March 31, 2022 compared to 2021 was primarily related to our expanding customer base and growth within in our current customer base.

Revenue – Power Purchase Agreements. Revenue from PPAs represents payments received from customers for power generated through the provision of equipment and service. At March 31, 2022, there were 77 GenKey sites associated with PPAs, as compared to 50 at March 31, 2021. Revenue from PPAs for the three months ended March 31, 2022 increased $2.2 million, or 28.3%, to $10.0 million from $7.8 million for the three months ended March 31, 2021. The increase in revenue from PPAs for the three months ended March 31, 2022 as compared to the three months ended March 31, 2021 was primarily attributable to the new sites for existing customers and new customers accessing the PPA solution. All of the new PPA sites in the first quarter of 2022 were not deployed until late in the quarter; therefore, the full impact on revenue has yet to be realized.

Revenue – fuel delivered to customers and related equipment. 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 on site. Revenue associated with fuel delivered to customers for the three months ended March 31, 2022 increased $2.3 million, or 20.6%, to $13.4 million from $11.1 million for the three months ended March 31, 2021. The increase in revenue was due to an increase in the number of sites with fuel contracts from 109 as of March 31, 2021 to 159 as of March 31, 2022. All of the new fuel sites in the first quarter of 2022 were not deployed until late in the quarter; therefore, the full impact on revenue has yet to be realized.

Cost of Revenue

Cost of revenue – sales of fuel cell systems, related infrastructure and equipment. Cost of revenue from sales of fuel cell systems, related infrastructure and equipment includes direct materials, labor costs, and allocated overhead costs related to the manufacture of our fuel cells such as GenDrive units and GenSure stationary backup power units, as well as hydrogen fueling infrastructure referred to at the site level as hydrogen installations, electrolyzers and other equipment such as cryogenic storage equipment. Cost of revenue from sales of fuel cell systems, related infrastructure and equipment for the three months ended March 31, 2022 increased 206.6%, or $59.9 million, to $88.8 million, compared to $29.0 million for the three months ended March 31, 2021. This increase was driven by the GenDrive deployment mix and increase in hydrogen installations, as well as increased freight and material cost largely due to inflationary pressures, and higher labor costs given an increasingly competitive labor market and COVID-19 related staffing and coverage issues. There were 1,229 GenDrive units recognized as revenue during the three months ended March 31, 2022, compared to 1,308 for the three months ended March 31, 2021. Gross profit generated from sales of fuel cell systems and related infrastructure decreased to 18.4% for the three months ended March 31, 2022, compared to 38.1% for the three months ended March 31, 2021 primarily due to increased freight and material cost largely due to inflationary pressures, and higher labor costs given an increasingly competitive labor market and COVID-19 related staffing and coverage issues. Additionally, the margin on the equipment revenue from recently acquired businesses is lower than our legacy equipment margins.

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. At March 31, 2022, there were 19,409 fuel cell units and 84 hydrogen installations under extended maintenance contracts, an increase from 14,189 fuel cell units and 60 hydrogen installations at March 31, 2021, respectively. Cost of revenue from services performed on fuel cell systems and related infrastructure for the three months ended March 31, 2022 increased 6.0%, or $0.8 million to $13.9 million, compared to $13.1 million for the three months ended March 31, 2021. The increase in cost of revenue was due primarily to the increase in volume and increased freight and material cost largely due to inflationary pressures, and higher labor costs given an increasingly competitive labor market and COVID-19 related staffing and coverage issues, and scrap charges associated with certain parts. Gross loss decreased to (68.4%) for the three months ended March 31, 2022, compared to (116.5%) for the three months ended March 31, 2021, primarily due to the release of loss accrual recorded in prior periods, offset by certain unexpected costs, including varied inflation, labor market and COVID-19 related issues and scrap charges associated with certain parts.

Cost of revenue – provision for loss contracts related to service. The Company also recorded a provision for loss contracts related to service of $2.1 million for the three months ended March 31, 2022, compared to $1.5 million for the three months ended March 31, 2021, related primarily to new service contracts entered into during the first quarter of 2022.

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. At March 31, 2022, there were 77 GenKey sites associated with PPAs, as compared to 50 at March 31, 2021. Cost of revenue from PPAs for the three months ended March 31, 2022 increased 73.1%, or $13.4 million, to $31.8 million from $18.3 million for the three months ended March 31, 2021 due to the increase in units and sites under PPA contract as well as certain inflation and COVID-19 related issues such as increased freight costs and scrap charges associated with certain parts. Gross loss increased to (216.4%) for the three months ended March 31, 2022, as compared to (134.4%) for the three months ended March 31, 2021 primarily due to certain inflation and COVID-19 related issues, such as increased freight charges, and scrap charges associated with certain parts.

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 that ultimately is sold to customers and costs for onsite generation. Cost of revenue from fuel delivered to customers for the three months ended March 31, 2022 increased 77.4%, or $17.1 million, to $39.3 million from $22.1 million for the three months ended March 31, 2021. The increase was primarily due to higher volume of hydrogen delivered to customer sites as a result of an increase in the number of hydrogen installations completed under GenKey agreements, inefficiencies in fueling systems and higher fuel costs. As a result of these inefficiencies and higher costs, gross loss increased to (192.5%) during the three months ended March 31, 2022, compared to (99.0%) during the three months ended March 31, 2021. We expect higher hydrogen molecule costs to continue at least through 2022.

Expenses

Research and development expense. Research and development ("R&D") expense includes: materials to build development and prototype units, cash and non-cash stock-based 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 three months ended March 31, 2022 increased $10.7 million, or 110.0%, to $20.5 million, from $9.7 million for the three months ended March 31, 2021. The overall growth in R&D investment is commensurate with the Company's future expansion into new markets, new product lines, acquisitions and varied vertical integrations.

Selling, general and administrative expenses. Selling, general and administrative expenses includes cash and non-cash stock-based 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 three months ended March 31, 2022, increased $55.3 million, or 216.2%, to $80.9 million from $25.6 million for the three months ended March 31, 2021. This increase was primarily related to increased headcount, which resulted in increased salaries and stock-based compensation, as well as branding expenses.

Contingent consideration. The fair value of the contingent consideration related to the Giner ELX, Inc., United Hydrogen Group Inc, Frames, Applied Cryo and Joule acquisitions was remeasured as of March 31, 2022, which resulted in a $2.5 million and $0.8 million charge for the three months ended March 31, 2022 and 2021, respectively.

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 three months ended March 31, 2022 increased

$2.0 million as compared to the three months ended March 31, 2021. The increase is primarily related to the increase in the investment portfolio during 2021.

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 three months ended March 31, 2022 decreased $3.7 million compared to the three months ended March 31, 2021, primarily related to a decrease in long-term debt and an increase in capitalized interest, offset by an increase in finance obligations.

Realized loss on investments, net. Realized loss on investments, net consists of the sales related to available-for-sale debt securities. For the three months ended March 31, 2022 and 2021, the Company had a loss of $847 thousand and $0, respectively, of net realized loss on investments.

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 three months ended March 31, 2022, the Company had a $5.2 million change in the fair value of equity securities. The Company did not have any equity securities for the three months ended March 31, 2021.

Loss on equity method investments. Loss on equity method investments consists of our interest in HyVia, which is our 50/50 joint venture with Renault, AccionaPlug S.L., which is our 50/50 joint venture with Acciona, and HALO Hydrogen Co, Ltd., which is our 49/51 joint venture with SK E&S. For the three months ended March 31, 2022, the Company recorded a loss of $3.8 million on equity method investments. The Company did not have any equity method investments for the three months ended March 31, 2021.

Income Tax

The Company recorded $0.4 million and $0 of income tax benefit for the three months ended March 31, 2022 and 2021, respectively. The Company has not changed its overall conclusion with respect to the need for a valuation allowance against its domestic net deferred tax assets, which remain fully reserved.

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 carry forward 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.

Liquidity and Capital Resources

Liquidity

As of both March 31, 2022 and December 31, 2021, the Company had $2.5 billion of cash and cash equivalents and $683.0 million and $650.9 million of restricted cash, respectively. In January and February 2021, the Company issued and sold in a registered equity offering an aggregate of 32.2 million shares of its common stock at a purchase price of $65.00 per share for net proceeds of approximately $2.0 billion. In February 2021, the Company sold 54,996,188 shares of its common stock to a subsidiary of SK Holdings at a purchase price of $29.2893 per share, or an aggregate purchase price of approximately $1.6 billion.

The Company has continued to experience negative cash flows from operations and net losses. The Company incurred net losses attributable to common stockholders of $156.5 million and $60.7 million for the three months ended March 31, 2022 and 2021, respectively, and had an accumulated deficit of $2.6 billion at March 31, 2022. The net cash used in operating activities for the three months ended March 31, 2022 and 2021 was $209.9 million and $117.1 million, respectively. The net cash provided by (used in) investing activities for the three months ended March 31, 2022 and 2021 was $273.9 million and ($418.4) million, respectively. The net cash (used in) provided by financing activities for the three months ended March 31, 2022 and 2021 was ($18.2) million and $3,594.4 million, respectively.

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

(i) Operating and finance leases totaling $219.7 million and $36.2 million, respectively, of which $33.5 million and $5.7 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.

(ii) Finance obligations totaling $260.2 million, of which approximately $44.3 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.

(iii) Long-term debt, primarily related to the Company's Loan Agreement with Generate Capital totaling $109.1 million, of which $4.2 million is classified as short term on our consolidated balance sheets.

(iv) Convertible senior notes totaling $192.9 million at March 31, 2022.

The Company's working capital was $3.7 billion at March 31, 2022, which included unrestricted cash and cash equivalents of $2.5 billion. The Company plans to invest a portion of its available cash to expand its current production and manufacturing capacity and to fund strategic acquisitions and partnerships and capital projects. Future use of the Company's funds is discretionary and the Company believes that its working capital and cash position will be sufficient to fund its operations for at least one year after the date the financial statements are issued.

Public and Private Offerings of Equity and Debt

Common Stock Issuances

In February 2021, the Company sold 54,966,188 shares of its common stock to a subsidiary of SK Holdings at a purchase price of $29.2893 per share, or an aggregate purchase price of approximately $1.6 billion.

In January and February 2021, the Company issued and sold in a registered equity offering an aggregate of 32.2 million shares of its common stock at a purchase price of $65.00 per share for net proceeds of approximately $2.0 billion.

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

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

In December 2019, the Company issued and sold in a registered public offering an aggregate of 46 million shares of its common stock at a purchase price of $2.75 per share for net proceeds of approximately $120.4 million.

In March 2019, the Company issued and sold in a registered direct offering an aggregate of 10 million shares of its common stock at a purchase price of $2.35 per share. The net proceeds to the Company were approximately $23.5 million.

Convertible Senior Notes

In May 2020, the Company issued $212.5 million in aggregate principal amount of 3.75% Convertible Senior Notes. The total net proceeds from this offering, after deducting costs of the issuance, were $205.1 million. The Company used $90.2 million of the net proceeds from the offering of the 3.75% Convertible Senior Notes to repurchase $66.3 million of the $100 million in aggregate principal amount of the 5.5% Convertible Senior Notes. In addition, the Company used approximately $16.3 million of the net proceeds from the offering of the 3.75% Convertible Senior Notes to enter into privately negotiated capped called transactions. In the fourth quarter of 2020, $33.5 million of the remaining 5.5% Convertible Senior Notes were converted into 14.6 million shares of common stock, resulting in a gain of approximately

$4.5 million which was recorded on the consolidated statement of operations on the gain (loss) on extinguishment of debt line. As of December 31, 2020, approximately $160 thousand aggregate principal amount of the 5.5% Convertible Senior Notes remained outstanding, all of which were converted to common stock in January 2021.

In September 2019, the Company issued $40.0 million in aggregate principal amount of 7.5% Convertible Senior Note. The Company's total obligation, net of interest accretion, due to the holder was $48.0 million. The total net proceeds from this offering, after deducting costs of the issuance, were $39.1 million. On July 1, 2020, the note automatically converted fully into 16.0 million shares of common stock.

Secured Debt

In March 2019, the Company entered into a loan and security agreement, as amended (the "Loan Agreement"), with Generate Lending, LLC ("Generate Capital"), providing for a secured term loan facility in the amount of $100 million (the "Term Loan Facility"). On March 31, 2022, the outstanding balance under the Term Loan Facility was $99.8 million. The carrying value of the Term Loan Facility approximates fair value.

The Loan Agreement includes covenants, limitations, and events of default customary for similar facilities. Interest and a portion of the principal amount is payable on a quarterly basis. Principal payments are funded in part by releases of restricted cash, as described in Note 19, "Commitments and Contingencies." Based on the amortization schedule as of March 31, 2022, the aforementioned loan balance under the Term Loan Facility will be fully paid by October 31, 2025. At March 31, 2022, the Company was in compliance with all debt covenants under the Term Loan Facility.

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. During the three months ended March 31, 2022, there were no conversions of the 3.75% Convertible Senior Notes.

The 3.75% Convertible Senior Notes consisted of the following (in thousands):

	March 31, 2022
Principal amounts:	
Principal	$ 197,278
Unamortized debt issuance costs (1)	(4,329)
Net carrying amount	$ 192,949

1) Included in the unaudited interim condensed 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, the amortization of debt issuance costs and the effective interest rate related to the 3.75% Convertible Senior Notes (in thousands, except for effective interest rate):

	March 31, 2022	March 31, 2021
Interest expense	$ 1,849	$ 1,897
Amortization of debt issuance costs	316	1,258
Total	2,165	3,155
Effective interest rate	4.5%	4.5%

Based on the closing price of the Company's common stock of $28.61 on March 31, 2022, the if-converted value of the notes was greater than the principal amount. The estimated fair value of the note at March 31, 2022 was approximately $1.1 billion. The fair value estimation was primarily based on an active stock exchange trade on March 30, 2022 of the 3.75% Convertible Senior Notes.

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 were recorded as a reduction to additional paid-in capital in the unaudited interim condensed consolidated balance sheets.

The book value of the 3.75% Notes Capped Call is not remeasured.

Common Stock Forward

In March 2018, the Company issued $100.0 million in aggregate principal amount of the 5.5% Convertible Senior Notes due on March 15, 2023, in a private placement to qualified institutional buyers pursuant to Rule 144A under the Securities Act, which have been fully converted into shares of common stock. In connection with the issuance of the 5.5% Convertible Senior Notes, the Company entered into a forward stock purchase transaction (the "Common Stock Forward"), pursuant to which the Company agreed to purchase 14,397,906 shares of its common stock for settlement on or about March 15, 2023. On May 18, 2020, the Company amended and extended the maturity of the Common Stock Forward to June 1, 2025. The number of shares of common stock that the Company will ultimately repurchase under the Common Stock Forward is subject to customary anti-dilution adjustments. The Common Stock Forward is subject to early settlement or settlement with alternative consideration in the event of certain corporate transactions.

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

The book value of the Common Stock Forward is not remeasured.

There were no shares of common stock settled in connection with the Common Stock Forward during the three months ended March 31, 2022. During the three months ended March 31, 2021, the Common Stock Forward was partially settled and 5.9 million shares were received by the Company.

Amazon Transaction Agreement

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

The warrant had been exercised with respect to 17,461,994 shares of the Company's common stock as of both March 31, 2022 and December 31, 2021.

At December 31, 2021, all 55,286,696 of the Amazon Warrant Shares had vested. For service contracts entered into prior to December 31, 2020, the warrant charge associated with that revenue was capitalized and is subsequently amortized over the life of the service contract. The total amount of provision for common stock warrants recorded as a reduction of revenue for the Amazon Warrant during the three months ended March 31, 2022 and 2021 was $110 thousand and $104 thousand, respectively.

Walmart Transaction Agreement

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

The warrant had been exercised with respect to 13,094,217 shares of the Company's common stock as of both March 31, 2022 and December 31, 2021.

At March 31, 2022 and 2021, respectively, 20,368,782 and 13,094,217 of the Walmart Warrant Shares had vested. The total amount of provision for common stock warrants recorded as a reduction of revenue for the Walmart Warrant during the three months ended March 31, 2022 and 2021 was $1.7 million and $1.6 million, respectively. During the three months ended March 31, 2022 and 2021, respectively, the Walmart Warrant was exercised with respect to 0 and 7,274,565 shares of common stock.

Operating and Finance Lease Liabilities

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

Leases contain termination clauses with associated penalties, the amount of which cause the likelihood of cancellation to be remote. At the end of the lease term, the leased assets may be returned to the lessor by the Company, the Company may negotiate with the lessor to purchase the assets at fair market value, or the Company may negotiate with the lessor to renew the lease at market rental rates. No residual value guarantees are contained in the leases. No financial covenants are contained within the lease; however, the lease contains customary operational covenants such as the requirement that the Company properly maintain the leased assets and carry appropriate insurance. The leases include credit support in the form of either cash, collateral or letters of credit.

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

Finance Obligation

The Company has sold future services to be performed associated with certain sale/leaseback transactions and recorded the balance as a finance obligation. The outstanding balance of this obligation at March 31, 2022 was $244.1 million, $40.5 million and $203.6 million of which was classified as short-term and long-term, respectively, on the accompanying unaudited interim condensed consolidated balance sheet. The outstanding balance of this obligation at December 31, 2021 was $236.6 million, $37.5 million and $199.1 million of which was classified as short-term and long-term, respectively. The amount is amortized using the effective interest method. The fair value of this finance obligation approximated the carrying value as of March 31, 2022 and December 31, 2021.

In prior periods, the Company entered into sale/leaseback transactions that were accounted for as financing transactions and reported as part of finance obligations. The outstanding balance of finance obligations related to sale/leaseback transactions at March 31, 2022 was $16.1 million, $3.8 million and $12.3 million of which was classified as short-term and long-term, respectively on the accompanying consolidated balance sheet. The outstanding balance of this obligation at December 31, 2021 was $17.0 million, $4.5 million and $12.5 million of which was classified as short-term and long-term, respectively on the accompanying consolidated balance sheets. The fair value of this finance obligation approximated the carrying value as of both March 31, 2022 and December 31, 2021.

Restricted Cash

In connection with certain of the above noted sale/leaseback agreements, cash of $252.6 million and $275.1 million was required to be restricted as security as of March 31, 2022 and December 31, 2021, respectively, which restricted cash will be released over the lease term. As of March 31, 2022 and December 31, 2021, the Company also had certain letters of credit backed by security deposits totaling $339.7 million and $286.0 million, respectively, that are security for the above noted sale/leaseback agreements.

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

The Company also had $5.0 million of consideration held by our paying agent in connection with the Applied Cryo acquisition reported as restricted cash as of March 31, 2022, with a corresponding accrued liability on the Company's unaudited interim condensed consolidated balance sheet. Additionally, the Company had $15.3 million in restricted cash as collateral resulting from the Frames acquisition.

Investments

Our investment portfolio, including cash and cash equivalents, totaled $3.4 billion at March 31, 2022. Purchases of fixed maturity securities are classified as available-for-sale at the time of purchase based on individual security.

The composition of our investment portfolio, including cash and cash equivalents, as of March 31, 2022, is shown in the following table, (in thousands):

	Carrying Amount	Percentage of Portfolio
Fixed maturity securities - available-for-sale		
U.S. Treasuries	$ 554,307	16.1%
Corporate bonds	244,921	7.1%
Total fixed maturity securities - available-for-sale	$ 799,228	23.2%
Equity securities	147,826	4.3%
Cash and cash equivalents	2,495,614	72.5%
Total investments, including cash and cash equivalents	$ 3,442,668	100.0%

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 have been sold. The following table shows the rollforward of balance in the accrual for loss contracts, including changes due to the provision for loss accrual, loss accrual from acquisition, releases to service cost of sales, and releases due to the provision for warrants (in thousands):

	Three months ended March 31, 2022	Year ended December 31, 2021
Beginning balance	$ 89,773	$ 24,013
Provision for loss accrual	2,048	71,988
Loss accrual from acquisition	—	2,636
Releases to service cost of sales	(9,345)	(8,864)
Ending balance	$ 82,476	$ 89,773

Critical Accounting Estimates

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

There have been no changes in our critical accounting estimates from those reported in our 2021 Form 10-K.

Recent Accounting Pronouncements

Recently Adopted Accounting Guidance

Other than the adoption of the accounting guidance mentioned in our 2021 Form 10-K, there have been no other significant changes in our reported financial position or results of operations and cash flows resulting from the adoption of new accounting pronouncements.

Recent Accounting Guidance Not Yet Effective

All issued but not yet effective accounting and reporting standards as of March 31, 2022 are either not applicable to the Company or are not expected to have a material impact on the Company.

Item 3 — Quantitative and Qualitative Disclosures about Market Risk

There has been no material change from the information provided in the Company's Annual Report on Form 10-K for the year ended December 31, 2021 under the section titled "Item 7A: Quantitative and Qualitative Disclosures About Market Risk."

Item 4 — Controls and Procedures

(a) 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 the end of the period covered by this report. Based on such evaluation, our Chief Executive Officer and Chief Financial Officer have concluded that our disclosure controls and procedures were not effective in 2018, 2019, 2020 and 2021 because of the material weaknesses in internal control over financial reporting described in Part II, Item 9A "Controls and Procedures" of our Annual Report Form 10-K for the year ended December 31, 2021. The material weaknesses have not been remediated as of March 31, 2022.

Material Weakness

Management identified that the following deficiency existed in internal control over financial reporting in 2018, 2019, 2020 and 2021: the Company did not maintain a sufficient complement of trained, knowledgeable resources to execute its responsibilities with respect to internal control over financial reporting for certain financial statement accounts and disclosures. As a consequence, the Company did not conduct an effective risk assessment process that was responsive to changes in the Company's operating environment and did not design and implement effective process-level controls in the following areas:

(a) presentation of operating expenses;
(b) accrual for loss contracts related to service; and
(c) identification of adjustments to physical inventory.

As of December 31, 2021, management identified additional deficiencies which were also the result of the Company not maintaining a sufficient complement of trained, knowledgeable resources to execute its responsibilities and conduct an effective risk assessment. Specifically, the process-level controls to ensure proper capitalization of inventory costs were not performed with an appropriate level of precision to detect and prevent a material misstatement. Additionally, management identified ineffective general information technology control activities over an information technology system that is used in calculating fuel billings, due to the ineffective risk assessment in identifying the relevant system.

Management did not design and implement general information technology control activities in response to the current year growth in fuel delivered to customers.

The control deficiency, related to the accrual for loss contracts related to service, resulted in a material misstatement that was corrected prior to the filing of the Annual Report on Form 10-K for of the year ended December 31, 2021. We did not identify any other material misstatements to the consolidated financial statements and there were no changes to previously issued financial results as a result of the other control deficiencies; however, the control deficiencies described above created a reasonable possibility that a material misstatement to the consolidated financial statements would not be prevented or detected on a timely basis. As a result, we concluded the deficiencies described above represent material weaknesses in our internal control over financial reporting, and our internal control over financial reporting was not effective as of December 31, 2021.

The Company acquired Applied Cryo Technologies and Frames Holdings B.V. (together, the "Acquired Companies") during 2021, and management excluded from its assessment of the effectiveness of the Company's internal control over financial reporting as of December 31, 2021, the Acquired Companies' internal control over financial reporting associated with total assets of $369.1 million and total revenues of $15.8 million included in the consolidated financial statements of the Company as of and the year ended December 31, 2021.

Remediation Activities

As reported on our Annual Report on Form 10-K for the year ended December 31, 2021, we continue to take steps to remediate this material weakness and will continue to take further steps until such remediation is complete. These steps include the following:

a) Hiring additional resources, including third-party resources, with the appropriate technical accounting expertise, and strengthening internal training, to assist us in identifying and addressing any complex technical accounting issues that affect our consolidated financial statements.
b) Designing and implementing a comprehensive and continuous risk assessment process to identify and assess risks of material misstatements, and ensure that the impacted financial reporting processes and related internal controls are properly designed, maintained, and documented to respond to those risks in our financial reporting.
c) Implementing more structured analysis and review procedures and documentation for the application of GAAP, complex accounting matters, and key accounting policies.
d) Augmenting our current estimation policies and procedures to be more robust and in-line with overall market dynamics, including an evaluation of our operating environment, in order to ensure operating effectiveness of certain process-level control activities.
e) Deploying new tools and tracking mechanisms to help enhance and maintain the appropriate documentation surrounding our classification of operating expenses.
f) Further enhancing our policies, procedures, and controls related to physical inventory counting both in interim periods and at year-end.
g) Implementing general information technology controls over our information technology system used in calculating fuel billings.
h) Implementing structured analysis and review procedures around the manual processes related to capitalization of inventory costs.
i) Reporting regularly to the Company's Audit Committee on the progress and results of the remediation plan, including the identification, status, and resolution of internal control deficiencies.

As we work to improve our internal control over financial reporting, we may modify our remediation plan and may implement additional measures as we continue to review, optimize, and enhance our financial reporting controls and procedures in the ordinary course. The material weaknesses will not be considered remediated until the remediated controls have been operating for a sufficient period of time and can be evidenced through testing that these controls are operating effectively.

(c) Changes in internal control over financial reporting

Exclusive of the steps taken as part of the remediation activities, there were no changes in the Company's internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) that occurred during the quarter ended March 31, 2022 that have materially affected, or are reasonably likely to materially affect, the Company's internal control over financial reporting.

Part II. OTHER INFORMATION

Item 1 – Legal Proceedings

Refer to Part I, Item 3, "Legal Proceedings," of the Company's Annual Report on Form 10-K for the year ended December 31, 2021 for a full description of our material pending legal matters.

Item 1A – Risk Factors

In addition to the other information set forth in this Quarterly Report on Form 10-Q, you should carefully consider the risk factors that could materially affect the Company's business, financial condition or future results discussed in the Company's Annual Report on Form 10-K for the year ended December 31, 2021 in Part I, Item 1A. "Risk Factors." The risks described in the Annual Report on Form 10-K are not the only risks that could affect the Company. Additional risks and uncertainties not currently known to us or that we currently deem to be immaterial may also materially adversely affect our business, financial condition and/or operating results in the future. There have been no material changes to our risk factors since December 31, 2021.

Item 2 - Unregistered Sales of Equity Securities and Use of Proceeds

(a) Not applicable.

(b) Not applicable.

(c) None.

Item 3 — Defaults Upon Senior Securities

None.

Item 4 — Mine Safety Disclosures

None.

Item 5 — Other Information

None.

Item 6 — Exhibits

3.1	Amended and Restated Certificate of Incorporation of Plug Power Inc. (filed as Exhibit 3.1 to Plug Power Inc.'s Annual Report on Form 10-K for the year ended December 31, 2008 and incorporated by reference herein).
3.2	Certificate of Amendment to Amended and Restated Certificate of Incorporation of Plug Power Inc. (filed as Exhibit 3.3 to Plug Power Inc.'s Annual Report on Form 10-K for the year ended December 31, 2008 and incorporated by reference herein).
3.3	Second Certificate of Amendment of Amended and Restated Certificate of Incorporation of Plug Power Inc. (filed as Exhibit 3.1 to Plug Power Inc.'s Current Report on Form 8-K filed on May 19, 2011 and incorporated by reference herein).
3.4	Third Certificate of Amendment of Amended and Restated Certificate of Incorporation of Plug Power Inc. (filed as Exhibit 3.1 to Plug Power Inc.'s Current Report on Form 8-K filed on July 25, 2014 and incorporated by reference herein).
3.5	Certificate of Correction to Third Certificate of Amendment of Amended and Restated Certificate of Incorporation of Plug Power Inc. (filed as Exhibit 3.9 to Plug Power Inc.'s Annual Report on Form 10-K for the year ended December 31, 2016 and incorporated by reference herein).
3.6	Fourth Certificate of Amendment of Amended and Restated Certificate of Incorporation of Plug Power Inc. (filed as Exhibit 3.1 to Plug Power Inc.'s Current Report on Form 8-K filed on June 30, 2017 and incorporated by reference herein).
3.7	Fifth Certificate of Amendment of Amended and Restated Certificate of Incorporation of Plug Power Inc. (filed as Exhibit 3.7 to Plug Power Inc.'s Quarterly Report on Form 10-Q filed on August 5, 2021 and incorporated by reference herein).
3.8	Certificate of Designations, Preferences and Rights of a Series of Preferred Stock of Plug Power Inc. classifying and designating the Series A Junior Participating Cumulative Preferred Stock. (filed as Exhibit 3.1 to Plug Power Inc.'s Registration Statement on Form 8-A filed on June 24, 2009 and incorporated by reference herein).
3.9	Fourth Amended and Restated By-laws of Plug Power Inc. (filed as Exhibit 3.9 to Plug Power Inc.'s Annual Report on Form 10-K for the year ended December 31, 2020 and incorporated by reference herein).
10.1*	Executive Employment Agreement, dated as of April 16, 2019, between Sanjay Shrestha and Plug Power Inc.
10.2*	Executive Employment Agreement, dated as of December 7, 2020, between Dirk Ole Hoefelmann and Plug Power Inc.
31.1*	Certification pursuant to 18 U.S.C. Section 1350, adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2*	Certification pursuant to 18 U.S.C. Section 1350, adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1**	Certification pursuant to 18 U.S.C. Section 1350, adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
32.2**	Certification pursuant to 18 U.S.C. Section 1350, adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101.INS*	Inline XBRL Instance Document
101.SCH*	Inline XBRL Taxonomy Extension Schema Document
101.CAL*	Inline XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF*	Inline XBRL Taxonomy Extension Definition Linkbase Document
101.LAB*	Inline XBRL Taxonomy Extension Labels Linkbase Document
101.PRE*	Inline XBRL Taxonomy Extension Presentation Linkbase Document
104*	Cover Page Interactive Data File (embedded within the Inline XBRL document)

* Submitted electronically herewith.

** Pursuant to Item 601(b)(32)(ii) of Regulation S-K, this certification is not being filed for purposes of Section 18 of the Securities Exchange Act of 1934, as amended.

Signatures

Pursuant to requirements 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.

Date: May 9, 2022

By: /s/ Andrew Marsh
Andrew Marsh
President, Chief Executive Officer and Director (Principal Executive Officer)

Date: May 9, 2022

By: /s/ Paul B. Middleton
Paul B. Middleton
Chief Financial Officer (Principal Financial Officer)

Exhibit 10.1

EXECUTIVE EMPLOYMENT AGREEMENT

This Employment Agreement ("Agreement") is made as of the 16th day of April, 2019 (the "Commencement Date"), between Plug Power Inc., a Delaware corporation (the "Company"), and Sanjay Shrestha (the "Executive").

WHEREAS, the Executive and the Company have determined to enter into an agreement related to the employment of Executive by the Company;

NOW, THEREFORE, in consideration of the mutual covenants and agreements herein contained and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the patties agree as follows:

1. Employment. The term of this Agreement shall extend from the Commencement Date until the first anniversary of the Commencement Date; provided, however, that the term of this Agreement shall automatically be extended for one additional year on the anniversary of the Commencement Date and on each anniversary thereafter unless, not less than ninety (90) days prior to each such date, either party shall have given notice to the other that it does not wish to extend this Agreement; provided, further, that if a Change in Control occurs during the original or extended term of this Agreement, the term of this Agreement shall continue in effect for a period of not less than twelve (12) months beyond the month in which the Change in Control occurred. The term of this Agreement shall also terminate upon any Date of Termination (as defined in Section 4) and may be referred to herein as the "Term.

2. Position and Duties. During the Term, the Executive shall serve as the Chief Strategy Officer, and shall have responsibilities and duties consistent with his position and such other responsibilities and duties as may from time to time be prescribed by the Chairman of the Board of Directors of the Company (the "Board"), the Chief Executive Officer of the Company (the "CEO") or other authorized executives, provided that such responsibilities and duties are consistent with the Executive's position or other positions that he may hold from time to time. The Executive shall devote his full working time and eff01ts to the business and affairs of the Company. Notwithstanding the foregoing, the Executive may serve on other boards of directors with the approval of the Board, or engage in religious, charitable or other community activities as long as such services and activities are disclosed to the Board and do not materially interfere with the Executive's performance of his duties to the Company as provided in this Agreement.

3. Policies. Except as provided herein, the Executive shall be covered by and agrees to comply with all of the Company's policies and procedures, including but not limited to the Company's Employee Handbook, on the same terms as are applicable to other executives of the Company.

4. Compensation and Related Matters.

(a) Base Salary. The Executive's initial annual base salary shall be $300,000.00. The Executive's base salary shall be re-determined annually by the Compensation Committee of the Board. The base salary in effect at any given time is referred to herein as "Base

Salary." The Base Salary shall be payable in substantially equal installments based upon the payroll cycle of the Company and will be subject to applicable withholdings and deductions.

(b) Incentive Compensation. The Executive shall be eligible to receive cash incentive compensation as determined by Compensation Committee of the Board from time to time.

(c) Expenses. The Executive shall be entitled to receive prompt reimbursement for all reasonable expenses incuned by him in performing services hereunder during the Term, in accordance with the policies and procedures then in effect and established by the Company for its senior executive officers.

(d) Other Benefits. During the Tenn, the Executive shall be entitled to continue to participate in or receive benefits under all of the Company's Employee Benefit Plans in accordance with the terms of such plans in effect on the date hereof, or under plans or arrangements that provide the Executive with benefits at least substantially equivalent to those provided under such Employee Benefit Plans. As used herein, the term "Employee Benefit Plans" includes, without limitation, each retirement plan; stock option plan; life insurance plan; medical insurance plan; disability plan; and health and accident plan or arrangement established and maintained by the Company on the date hereof for employees of the same status within the hierarchy of the Company. During the Term, the Executive shall be entitled to participate in or receive benefits under any employee benefit plan or arrangement which may, in the future, be made available by the Company to its executives and key management employees, subject to and on a basis consistent with the terms, conditions and overall administration of such plan or arrangement. Any payments or benefits payable to the Executive under a plan or arrangement refened to in this Section 3(d) in respect of any calendar year during which the Executive is employed by the Company for less than the whole of such year shall, unless otherwise provided in the applicable plan or arrangement, be prorated in accordance with the number of days in such calendar year during which he is so employed. Should any such payments or benefits accrne on a fiscal (rather than calendar) year, then the proration in the preceding sentence shall be on the basis of a fiscal year rather than calendar year.

(e) Vacations. The Executive shall be entitled to 160 hours of paid vacation in each calendar year, which shall be accrned monthly during the calendar year. The Executive shall also be entitled to all paid holidays given by the Company to its executives.

5. Termination. The Executive's employment hereunder may be terminated without any breach of this Agreement under the following circumstances:

(a) Death. The Executive's employment hereunder shall automatically terminate upon his death.

(b) Disability. The Company may terminate the Executive's employment if he is disabled and unable to perform the essential functions of the Executive's then existing position or positions under this Agreement with or without reasonable accommodation for a period of 180 days (which need not be consecutive) in any 12-month period. If any question shall arise as to whether during any period the Executive is disabled so as to be unable to perform the essential

functions of the Executive's then existing position or positions with or without reasonable accommodation, the Executive may, and at the request of the Company shall, submit to the Company a certification in reasonable detail by a physician selected by the Company to whom the Executive or the Executive's guardian has no reasonable objection as to whether the Executive is so disabled or how long such disability is expected to continue, and such certification shall for the purposes of this Agreement be conclusive of the issue. The Executive shall cooperate with any reasonable request of the physician in connection with such certification. If such question shall arise and the Executive shall fail to submit such certification, the Company's determination of such issue shall be binding on the Executive. Nothing in this Section 4(b) shall be construed to waive the Executive's rights, if any, under existing law including, without limitation, the Family and Medical Leave Act of 1993, 29 U.S.C. §2601 *et seq.* and the Americans with Disabilities Act, 42 U.S.C. §12101 *et seq.*

(c) Termination by the Company for Cause. At any time during the Term, the Company may terminate the Executive's employment hereunder for Cause. For purposes of this Agreement, "Cause" shall mean: (i) conduct by the Executive constituting a material act of misconduct in connection with the performance of the Executive's duties, including, without limitation, misappropriation of funds or property of the Company or any of its subsidiaries or affiliates other than the occasional, customary and de minimis use of Company property for personal purposes; (ii) the commission by the Executive of (A) any felony; or (B) a misdemeanor involving moral turpitude, deceit, dishonesty or fraud; (iii) any conduct by the Executive that would reasonably be expected to result in material injury or reputational harm to the Company or any of its subsidiaries and affiliates if the Executive were retained in the Executive's position; (iv) continued non-performance by the Executive of the Executive's responsibilities hereunder (other than by reason of the Executive's physical or mental illness, incapacity or disability) which has continued for more than thirty (30) days following written notice of such non-performance from the Board; (v) a breach by the Executive of the Employee Patent, Confidential Information and Non-Compete Agreement between the Executive and the Company (the "Confidentiality Agreement"); (vi) a material violation by the Executive of any of the Company's written employment policies; (vii) failure to cooperate with a bona fide internal investigation or an investigation by regulatory or law enforcement authorities, after being instructed by the Company to cooperate, or the willful destruction or failure to preserve documents or other materials known to be relevant to such investigation or the inducement of others to fail to cooperate or to produce documents or other materials in connection with such investigation; or (viii) the Executive's failure to honor his fiduciary duties to the Company.

(d) Termination Without Cause. At any time during the Term, the Company may terminate the Executive's employment hereunder without Cause. Any termination by the Company of the Executive's employment under this Agreement which does not constitute a termination for Cause under Section 5(c) or result from the death or disability of the Executive under Section 5(a) or (b) shall be deemed a termination without Cause.

(e) Termination by the Executive. At any time during the Term, the Executive may terminate his employment hereunder for any reason, including but not limited to Good Reason. If the Executive provides notice to the Company under Section 1 that he elects to discontinue the extensions, such action shall be deemed a voluntary termination by the Executive and one without Good Reason. For purposes of this Agreement, "Good Reason" shall mean that

the Executive has complied with the "Good Reason Process" (hereinafter defined) following the occurrence of any of the following events after a Change in Control: (i) a material diminution in the Executive's responsibilities, authority or duties; (ii) a material diminution in the Executive's Base Salary; (iii) a material change in the geographic location at which the Executive provides services to the Company; or (iv) the material breach of this Agreement by the Company. "Good Reason Process" shall mean that (i) the Executive reasonably determines in good faith that a "Good Reason" condition has occurred; (ii) the Executive notifies the Company in writing of the occurrence of the Good Reason condition within sixty (60) days of the occurrence of such condition; (iii) the Executive cooperates in good faith with the Company's efforts, for a period not less than 30 days following such notice (the "Cure Period"), to remedy the condition; (iv) notwithstanding such efforts, the Good Reason condition continues to exist; and (v) the Executive terminates his employment within sixty (60) days after the end of the Cure Period. If the Company cures the Good Reason condition during the Cure Period, Good Reason shall be deemed not to have occurred.

(f) Notice of Termination. Except for termination as specified in Section 5(a), any termination of the Executive's employment by the Company or any such termination by the Executive shall be communicated by written Notice of Termination to the other paiiy hereto. For purposes of this Agreement, a "Notice of Termination" shall mean a notice which shall indicate the specific termination provision in this Agreement relied upon.

(g) Date of Termination. "Date of Termination" shall mean: (i) if the Executive's employment is terminated by his death, the date of his death; (ii) if the Executive's employment is terminated by the Company for Cause under Section 5(c), the date on which Notice of Termination is given; (iii) if the Executive's employment is terminated by the Company under Section 5(b) or 5(d), thirty (30) days after the date on which a Notice of Termination is given; (iv) if the Executive's employment is terminated by the Executive under Section 5(e) without Good Reason, thirty (30) days after the date on which a Notice of Termination is given, and (v) if the Executive's employment is terminated by the Executive under Section 5(e) with Good Reason, the date on which a Notice of Termination is given after the end of the Cure Period. Notwithstanding the foregoing, in the event that the Executive gives a Notice of Termination to the Company, the Company may unilaterally accelerate the Date of Termination and such acceleration shall not constitute a termination by the Company for purposes of this Agreement.

6. Compensation Upon Termination.

(a) Termination Generally. If the Executive's employment with the Company is terminated for any reason during the Term, the Company shall pay or provide to the Executive (or to his authorized representative or estate) any earned but unpaid base salary, incentive compensation determined by the Board to be earned but not yet paid, unpaid expense reimbursements, accrued but unused vacation and any vested benefits the Executive may have under the Company's Employee Benefit Plans through the Date of Termination (the "Accrued Benefit"). The Executive shall not be entitled to receive any other termination payments or benefits from the Company except as specifically provided in Section 6(b) or Section 7.

(b) Termination by the Company Without Cause. Except as provided in Section 7, if the Executive's employment is terminated by the Company without Cause as provided

in Section 5(d), then the Company shall, through the Date of Termination, pay the Executive his Accrued Benefit. Except as provided in Section 7, if (i) the Executive's employment is terminated by the Company without Cause as provided in Section 5(d), (ii) the Executive signs a general release of claims in a form and manner satisfactory to the Company (the "Release") within 21 days of the receipt of the Release and does not revoke such Release during the seven-day revocation period (if applicable), and (iii) the Executive complies with the Confidentiality Agreement, then

A. The Company shall pay the Executive an amount equal to the sum of 0.5 (zero point five) times the Executive's Base Salary. Such amount shall be paid out either in a lump sum or in installments, per the discretion of the Company, and commencing on the first payroll date after the Date of Termination or expiration of the seven-day revocation period for the Release, whichever is later.

B. As of the Date of Termination, all vested stock options held by the Executive shall be exercisable for twelve (12) months following the Date of Termination; and any unvested stock options, restricted stock or other stock-based equity award will be immediately forfeited upon the Date of Termination.

C. Executive's coverage under the Company's group health insurance will extend through the end of the month in which the Date of Termination occurs. Executive may elect COBRA continuation coverage for the group health plans. Notification of conditions and premiums costs to continue health insurance will be provided to Executive following termination. Executive will be responsible for payment of premiums for health insurance coverage secured after the end of the month in which the Date of Termination occurs. In consideration of the loss of various benefits provided by the Company, the Company shall choose to either provide a lump sum payment to Executive equal to twelve (12) times the Company's share of the monthly health insurance premium for the health insurance plan in force on the Date of Termination, less applicable withholdings and deductions OR provide a monthly subsidy for a period of twelve (12) months and equivalent to the Company's share of the monthly health insurance premium for the health insurance plan in force on the Date of Termination to offset the Executive's COBRA cost.

D. The Company shall have no obligation to make any further payments (salary, bonus or otherwise) or provide any further benefits to Executive except as otherwise provided under the applicable terms of this Agreement or the Company's Employee Benefit Plans.

7. Change in Control Payment. The provisions of this Section 7 set forth certain terms regarding the Executive's rights and obligations upon the occurrence of a Change in Control of the Company. These provisions are intended to assure and encourage in advance the Executive's continued attention and dedication to his assigned duties and his objectivity during the pendency and after the occurrence of any such event. These provisions shall apply in lieu of, and expressly supersede, the provisions of Section 6(b) regarding severance pay and benefits upon a termination of employment, if such termination of employment occurs within 12 months after the occurrence of the first event constituting a Change in Control, provided that such first event occurs during the

Term. These provisions shall terminate and be of no further force or effect beginning 12 months after the occurrence of a Change in Control.

(a) Change in Control. If (i) within twelve (12) months after a Change in Control, the Executive's employment is terminated by the Company without Cause as provided in Section 5(d) or the Executive terminates his employment for Good Reason as provided in Section S(e), (ii) the Executive signs the Release within twenty-one (21) days of the receipt of the Release and does not revoke the Release during the seven-day revocation period (if applicable), and (iii) the Executive complies with the Confidentiality Agreement, then

A. The Company shall pay to the Executive an amount equal to (i) fifty percent (50%) the Executive's average annual base salary over the three (3) fiscal years immediately prior to the Termination Date (or the Executive's annual base salary in effect immediately prior to the Change in Control, if higher) and (ii) fifty percent (50%) of the Executive's average annual bonus over the three (3) fiscal years immediately prior to the Change in Control (or the Executive's annual bonus for the last fiscal year immediately prior to the Change in Control, if higher). Such amounts shall be paid out either in a lump sum or in installments, per the discretion of the Company, and commencing on the first payroll date after the Date of Termination or expiration of the seven-day revocation period for the Release, whichever is later, subject to Section 7(b) regarding additional limitations and Section 8 regarding IRC Section 409A.

B. Notwithstanding anything to the contrary in any applicable option agreement or stock-based award agreement, on the Termination Date the Executive shall vest in such pmiion of his stock options and other stock-based awards as he would have vested in if he had remained employed by the Company for twelve (12) months following the Termination Date.

C. Executive's coverage under the Company's group health insurance will extend through the end of the month in which the Date of Termination occurs. Executive may elect COBRA continuation coverage for the group health plans. Notification of conditions and premiums costs to continue health insurance will be provided to Executive following termination. Executive will be responsible for payment of premiums for health insurance coverage secured after the end of the month in which the Date of Termination occurs. In consideration of the loss of various benefits provided by the Company, the Company shall choose to either provide a lump sum payment to Executive equal to twelve (12) times the Company's share of the monthly health insurance premium for the health insurance plan in force on the Date of Termination, less applicable withholdings and deductions OR provide a monthly subsidy for a period of twelve (12) months and equivalent to the Company's share of the monthly health insurance premium for the health insurance plan in force on the Date of Termination to offset the Executive's COBRA cost.

D. The Company shall pay to the Executive all reasonable legal and arbitration fees and expenses incurred by the Executive in obtaining or

enforcing any right or benefit provided by this Agreement, except in cases involving frivolous or bad faith litigation.

E. The Company shall have no obligation to make any further payments (salary, bonus or otherwise) or provide any further benefits to Executive except as otherwise provided under the applicable terms of this Agreement or the Company's Employee Benefit Plans.

(b) Additional Limitation.

(i) Anything in this Agreement to the contrary notwithstanding, in the event that any compensation, payment or distribution by the Company to or for the benefit of the Executive, whether paid or payable or distributed or distributable pursuant to the terms of this Agreement or otherwise (the "Severance Payments"), would be subject to the excise tax imposed by Section 4999 of the Code, the following provisions shall apply:

A. If the Severance Payments, reduced by the sum of (1) the Excise Tax and (2) the total of the Federal, state, and local income and employment taxes payable by the Executive on the amount of the Severance Payments which are in excess of the Threshold Amount, are greater than or equal to the Threshold Amount, the Executive shall be entitled to the full benefits payable under this Agreement.

B. If the Threshold Amount is less than (x) the Severance Payments, but greater than (y) the Severance Payments reduced by the sum of (1) the Excise Tax and (2) the total of the federal, state, and local income and employment taxes on the amount of the Severance Payments which are in excess of the Threshold Amount, then the benefits payable under this Agreement shall be reduced (but not below zero) to the extent necessary so that the maximum Severance Payments shall not exceed the Threshold Amount.

(ii) For the purposes of this Section 7(b), "Threshold Amount" shall mean three times the Executive's "base amount" within the meaning of Section 280G(b)(3) of the Code and the regulations promulgated thereunder less one dollar ($1.00); and "Excise Tax" shall mean the excise tax imposed by Section 4999 of the Code, and any interest or penalties incurred by the Executive with respect to such excise tax.

(iii) The determination as to which of the alternative provisions of Section 7(b)(i) shall apply to the Executive shall be made by a nationally recognized accounting firm selected by the Company (the "Accounting Firm"), which shall provide detailed supporting calculations both to the Company and the Executive within fifteen (15) business days of the Date of Termination, if applicable, or at such earlier time as is reasonably requested by the Company or the Executive. For purposes of determining which of the alternative provisions of Section 7(b)(i) shall apply, the Executive shall be deemed to pay federal income taxes at the highest marginal rate of federal income taxation applicable to individuals for the calendar year in which the determination is to be made,

and state and local income taxes at the highest marginal rates of individual taxation in the state and locality of the Executive's residence on the Date of Termination, net of the maximum reduction in federal income taxes which could be obtained from deduction of such state and local taxes. Any determination by the Accounting Firm shall be binding upon the Company and the Executive.

(c) Definitions. For purposes of this Section 7, the following terms shall have the following meanings:

"Change in Control" shall be deemed to have occurred in any one of the following events:

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

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

(iii) Upon (A) the consummation of any consolidation or merger of the Company where the shareholders of the Company, immediately prior to the consolidation or merger, did not, immediately after the consolidation or merger, beneficially own (as such term is defined in Rule 13d-3 of the Exchange Act), directly or indirectly, shares representing in the aggregate more than 50% of the voting shares of the corporation issuing cash or securities in the consolidation or merger (or of its ultimate parent corporation, if any), (B) the consummation of any sale, lease, exchange or other transfer (in one transaction or a series of transactions contemplated or a1rnnged by any party as a single

plan) of all or substantially all of the assets of the Company or (C) the completion of a liquidation or dissolution that has been approved by the stockholders of the Company; or

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

Notwithstanding the foregoing, a "Change in Control" shall not be deemed to have occurred for purposes of the foregoing clause (i) solely as the result of an acquisition of securities by the Company which, by reducing the number of shares of Stock outstanding, increases the proportionate number of shares of Stock beneficially owned by any person to 25% or more of the shares of Stock then outstanding; provided, however, that if any such person shall at any time following such acquisition of securities by the Company become the beneficial owner of any additional shares of Stock (other than pursuant to a stock split, stock dividend, or similar transaction) and such person immediately thereafter is the beneficial owner of25% or more of the shares of Stock then outstanding, then a "Change in Control" shall be deemed to have occurred for purposes of the foregoing clause (i), as applicable.

8. Section 409A.

(a) Anything in this Agreement to the contrary notwithstanding, if at the time of the Executive's "separation from service" within the meaning of Section 409A of the Code, the Company determines that the Executive is a "specified employee" within the meaning of Section 409A(a)(2)(B)(i) of the Code, and to the extent any payment or benefit that the Executive becomes entitled to under this Agreement would be considered defend-ed compensation subject to the 20 percent additional tax imposed pursuant to Section 409A(a) of the Code as a result of the application of Section 409A(a)(2)(B)(i) of the Code, then no such payment shall be payable and no such benefit shall be provided prior to the date that is the earlier of (A) six months and one day after the Executive's separation from service, or (B) the Executive's death.

(b) All in-kind benefits provided and expenses eligible for reimbursement under this Agreement shall be provided by the Company or incurred by the Executive during the time periods set forth in this Agreement. All reimbursements shall be paid as soon as administratively practicable, but in no event shall any reimbursement be paid after the last day of the taxable year following the taxable year in which the expense was incurred. The amount of in kind benefits provided or reimbursable expenses incurred in one taxable year shall not affect the in-kind benefits to be provided or the expenses eligible for reimbursement in any other taxable year. Such right to reimbursement or in-kind benefits is not subject to liquidation or exchange for another benefit.

(c) To the extent that any payment or benefit described in this Agreement constitutes "non-qualified deferred compensation" under Section 409A of the Code, and to the extent that such payment or benefit is payable upon the Executive's termination of employment, then such payments or benefits shall be payable only upon the Executive's "separation from

service." The determination of whether and when a separation from service has occurred shall be made in accordance with the presumptions set forth in Treasury Regulation Section 1.409A-l(h).

(d) The parties intend that this Agreement will be administered in accordance with Section 409A of the Code. To the extent that any provision of this Agreement is ambiguous as to its compliance with Section 409A of the Code, the provision shall be read in such a manner so that all payments hereunder comply with Section 409A of the Code. The parties agree that this Agreement may be amended, as reasonably requested by either party, and as may be necessary to fully comply with Section 409A of the Code and all related rules and regulations in order to preserve the payments and benefits provided hereunder without additional cost to either party.

(e) The Company makes no representation or warranty and shall have no liability to the Executive or any other person if any provisions of this Agreement are determined to constitute deferred compensation subject to Section 409A of the Code but do not satisfy an exemption from, or the conditions of, such Section.

9. Covenants.

(a) Confidentiality Agreement. The Executive acknowledges and agrees that the Confidentiality and Non-Compete Agreement shall continue in effect as if set forth herein.

(b) Litigation and Regulatory Cooperation. During and after the Term, the Executive shall cooperate fully with the Company and all of its subsidiaries and affiliates (including its and their outside counsel) in connection with the contemplation, prosecution and defense of all phases of existing, past and future claims or actions which relate to events or occurrences that transpired while the Executive was employed by the Company. The Executive's full cooperation in connection with such claims or actions shall include, but not be limited to, being available to meet with counsel to prepare for discovery or trial and to act as a witness on behalf of the Company at mutually convenient times. During and after the Term, the Executive also shall cooperate fully with the Company in connection with any investigation or review of any federal, state or local regulatory authority as any such investigation or review relates to events or occurrences that transpired while the Executive was employed by the Company. The Company shall reimburse the Executive for any pre-approved reasonable business travel expenses that are incutTed in connection with the Executive's performance of obligations pursuant to this Section 8(a) after receipt of appropriate documentation consistent with the Company's business expense reimbursement policy.

(c) Disparagement. During and after the Term, the Executive agrees not to make any disparaging statements concerning the Company or any of its subsidiaries, affiliates or current or former officers, directors, shareholders, employees or agents ("Company Parties"). The Executive further agrees not to take any actions or conduct himself in any way that would reasonably be expected to affect adversely the reputation or good will of the Company or any of the Company Parties, The Executive further agrees that he shall not voluntarily provide information to or othe1wise cooperate with any individual or entity that is contemplating or pursuing litigation against the Company or any of the Company Parties or that is undertaking any investigation or review of the Company's or any of the Company Parties' activities or practices. Nothing in this Agreement prevents Executive from filing a charge with the Equal Employment

Opportunity Commission ("EEOC") or participating in any investigation or proceeding conducted by the EEOC nor does it limit Executive's ability to file a complaint with the Securities and Exchange Commission ("SEC") or communicate with the SEC or othe1wise participate in any investigation or proceeding that may be conducted by the SEC. These nondisparagement obligations shall not in any way affect the Executive's obligation to testify truthfully in any legal proceeding.

(d) Return of Property. As soon as possible in connection with any termination of the Executive's employment under this Agreement or when otherwise requested by the Company, the Executive shall return to the Company all Company prope1iy, including, without limitation, computer equipment, software, keys and access cards, credit cards, files and any documents (including computerized data and any copies made of computer data or software) containing information concerning the Company, its business or its business relationships (in the latter two cases, actual or prospective). The Executive shall also commit to deleting and finally purging any duplicates of files or documents that may contain Company information from any computer or other device that remains his property after any Date of Termination. If requested by the Company, Executive will provide a written acknowledgement and certification that all such Company property has been returned and electronic data permanently deleted and that Executive has not shared or provided such information to any third parties. Executive acknowledges and agrees that failure to surrender such property will cause ineparable damage to the Company.

(e) Injunction. The Executive agrees that it would be difficult to measure any damages caused to the Company which might result from any breach by the Executive of his obligations under this Agreement, and that in any event money damages would be an inadequate remedy for any such breach. Accordingly, subject to Section 10 of this Agreement, the Executive agrees that if the Executive breaches, or proposes to breach, any provision of this Agreement, the Company shall be entitled, in addition to all other remedies that it may have, to an injunction or other appropriate equitable relief to restrain any such breach without showing or proving any actual damage to the Company.

10. Settlement and Arbitration of Disputes. Any controversy or claim arising out of or relating to this Agreement or the breach thereof shall be settled exclusively by arbitration in accordance with the laws of the State of New York by three arbitrators, one of whom shall be appointed by the Company, one by the Executive and the third by the first two arbitrators. If the first two arbitrators cannot agree on the appointment of a third arbitrator, then the third arbitrator shall be appointed by the American Arbitration Association. Such arbitration shall be conducted in the City of Albany in accordance with the Employment Arbitration Rules of the American Arbitration Association, except with respect to the selection of arbitrators which shall be as provided in this Section 10. Judgment upon the award rendered by the arbitrators may be entered in any court having jurisdiction thereof. This Section 10 shall be specifically enforceable. Notwithstanding the foregoing, this Section 10 shall not preclude either party from pursuing a court action for the sole purpose of obtaining a temporary restraining order or a preliminary injunction in circumstances in which such relief is appropriate; provided that any other relief shall be pursued through an arbitration proceeding pursuant to this Section 10.

11. Consent to Jurisdiction. To the extent that any court action is permitted consistent with or to enforce Section IO of this Agreement, the pa1iies hereby consent to the jurisdiction of

the Supreme Court of New York State and the United States District Court for the Northern District of New York. Accordingly, with respect to any such court action, the Executive (a) submits to the personal jurisdiction of such court; (b) consents to service of process; and (c) waives any other requirement (whether imposed by statute, rule of court, or otherwise) with respect to personal jurisdiction or service of process.

12. Integration. This Agreement constitutes the entire agreement and understanding between the parties with respect to the subject matter hereof and supersedes all prior agreements between the parties concerning such subject matter, except the Confidentiality Agreement, which remains in full force and effect.

13. Withholding. All payments made by the Company to the Executive under this Agreement shall be net of any tax or other amounts required to be withheld by the Company under applicable law.

14. Successor to the Executive. This Agreement shall inure to the benefit of and be enforceable by the Executive's personal representatives, executors, administrators, heirs, distributes, devisees and legatees. In the event of the Executive's death after his termination of employment but prior to the completion by the Company of all payments due him under this Agreement, the Company shall continue such payments to the Executive's beneficiary designated in writing to the Company prior to his death (or to his estate, if the Executive fails to make such designation).

15. Enforceability. If any portion or provision of this Agreement (including, without limitation, any portion or provision of any section of this Agreement) shall to any extent be declared illegal or unenforceable by a comi of competent jurisdiction, then the remainder of this Agreement, or the application of such portion or provision in circumstances other than those as to which it is so declared illegal or unenforceable, shall not be affected thereby, and each portion and provision of this Agreement shall be valid and enforceable to the fullest extent permitted by law.

16. Waiver. No waiver of any provision hereof shall be effective unless made in writing and signed by the waiving party. The failure of any party to require the performance of any term or obligation of this Agreement, or the waiver by any patty of any breach of this Agreement, shall not prevent any subsequent enforcement of such term or obligation or be deemed a waiver of any subsequent breach.

17. Notices. Any notices, requests, demands and other communications provided for by this Agreement shall be sufficient if in writing and delivered in person or sent by a nationally recognized overnight courier service or by registered or certified mail, postage prepaid, return receipt requested, to the Executive at the last address the Executive has filed in writing with the Company or, in the case of the Company, at its main offices, attention of the Board.

18. Effect on Other Plans. Nothing in this Agreement shall be construed to limit the rights of the Executive under the Company's benefit plans, programs or policies except (a) as otherwise provided herein, and (b) that the Executive shall have no rights to any severance or similar benefits under any severance pay plan, policy or practice.

19. Amendment. This Agreement may be amended or modified only by a written instrument signed by the Executive and by a duly authorized representative of the Company.

20. Governing Law. This is a New York contract and shall be construed under and be governed in all respects by the laws of the State of New York, without giving effect to the conflict of laws principles of such State. With respect to any disputes concerning federal law, such disputes shall be determined in accordance with the law as it would be interpreted and applied by the United States Court of Appeals for the Second Circuit.

21. Counterparts. This Agreement may be executed in any number of counterparts, each of which when so executed and delivered shall be taken to be an original; but such counterparts shall together constitute one and the same document.

22. Successor to Company. The Company shall require any successor (whether direct or indirect, by purchase, merger, consolidation or otherwise) to all or substantially all of the business or assets of the Company expressly to assume and agree to perform this Agreement to the same extent that the Company would be required to perform it if no succession had taken place. Failure of the Company to obtain an assumption of this Agreement at or prior to the effectiveness of any succession shall be a breach of this Agreement and shall constitute Good Reason if the Executive elects to terminate employment.

23. Gender Neutral. Wherever used herein, a pronoun in the masculine gender shall be considered as including the feminine gender unless the context clearly indicates otherwise.

24. Survival. The provisions of this Agreement shall survive the termination of this Agreement and/or the termination of the Executive's employment to the extent necessary to effectuate the terms contained herein.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement effective on the date and year first above written.

PLUG POWER INC.

By: /s/ Andy Marsh
Name: Andy Marsh
Title: CEO & President

SANJAY SHRESTHA

By: /s/ Sanjay Shrestha
Name: Sanjay Shrestha
Title: Chief Strategy Officer

Exhibit 10.2

EXECUTIVE EMPLOYMENT AGREEMENT

This Employment Agreement ("Agreement") is made as of the 7th day of December, 2020 (the "Commencement Date"), between Plug Power Inc., a Delaware corporation (the "Company"), and Dirk Ole Hoefelmann (the "Executive").

WHEREAS, the Executive and the Company have determined to enter into an agreement related to the employment of Executive by the Company;

NOW, THEREFORE, in consideration of the mutual covenants and agreements herein contained and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties agree as follows:

1. Employment. The term of this Agreement shall extend from the Commencement Date until the first anniversary of the Commencement Date; provided, however, that the term of this Agreement shall automatically be extended for one additional year on the anniversary of the Commencement Date and on each anniversary thereafter unless, not less than ninety (90) days prior to each such date, either party shall have given notice to the other that it does not wish to extend this Agreement; provided, further, that if a Change in Control occurs during the original or extended term of this Agreement, the term of this Agreement shall continue in effect for a period of not less than twelve (12) months beyond the month in which the Change in Control occurred. The term of this Agreement shall also terminate upon any Date of Termination (as defined in Section 4) and may be referred to herein as the "Term.

2. Position and Duties. During the Term, the Executive shall serve as the General Manager, Electrolyzers, and shall have responsibilities and duties consistent with his position and such other responsibilities and duties as may from time to time be prescribed by the Chairman of the Board of Directors of the Company (the "Board"), the Chief Executive Officer of the Company (the "CEO") or other authorized executives, provided that such responsibilities and duties are consistent with the Executive's position or other positions that he may hold from time to time. The Executive shall devote his full working time and efforts to the business and affairs of the Company. Notwithstanding the foregoing, the Executive may serve on other boards of directors with the approval of the Board, or engage in religious, charitable or other community activities as long as such services and activities are disclosed to the Board and do not materially interfere with the Executive's performance of his duties to the Company as provided in this Agreement.

3. Policies. Except as provided herein, the Executive shall be covered by and agrees to comply with all of the Company's policies and procedures, including but not limited to the Company's Employee Handbook, on the same terms as are applicable to other executives of the Company.

4. Compensation and Related Matters.

(a) Base Salary. The Executive's initial annual base salary shall be $400,000.00 The Executive's base salary shall be re-determined annually by the Compensation Committee of the Board. The base salary in effect at any given time is referred to herein as "Base

Salary." The Base Salary shall be payable in substantially equal installments based upon the payroll cycle of the Company and will be subject to applicable withholdings and deductions.

(b) Incentive Compensation. The Executive shall be eligible to receive cash incentive compensation as determined by Compensation Committee of the Board from time to time.

(c) Expenses. The Executive shall be entitled to receive prompt reimbursement for all reasonable expenses incurred by him in performing services hereunder during the Term, in accordance with the policies and procedures then in effect and established by the Company for its senior executive officers.

(d) Other Benefits. During the Term, the Executive shall be entitled to continue to participate in or receive benefits under all of the Company's Employee Benefit Plans in accordance with the terms of such plans in effect on the date hereof, or under plans or arrangements that provide the Executive with benefits at least substantially equivalent to those provided under such Employee Benefit Plans. As used herein, the term "Employee Benefit Plans" includes, without limitation, each retirement plan; stock option plan; life insurance plan; medical insurance plan; disability plan; and health and accident plan or arrangement established and maintained by the Company on the date hereof for employees of the same status within the hierarchy of the Company. During the Term, the Executive shall be entitled to participate in or receive benefits under any employee benefit plan or arrangement which may, in the future, be made available by the Company to its executives and key management employees, subject to and on a basis consistent with the terms, conditions and overall administration of such plan or arrangement. Any payments or benefits payable to the Executive under a plan or arrangement referred to in this Section 3(d) in respect of any calendar year during which the Executive is employed by the Company for less than the whole of such year shall, unless otherwise provided in the applicable plan or arrangement, be prorated in accordance with the number of days in such calendar year during which he is so employed. Should any such payments or benefits accrue on a fiscal (rather than calendar) year, then the proration in the preceding sentence shall be on the basis of a fiscal year rather than calendar year.

(e) Vacations. The Executive shall be entitled to 200 hours of paid vacation in each calendar year, which shall be accrued monthly during the cale• year and shall be subject to the Company's vacation policy. The Executive shall also be entitled to all paid holidays given by the Company to its executives.

5. Termination. The Executive's employment hereunder may be terminated without any breach of this Agreement under the following circumstances:

(a) Death. The Executive's employment hereunder shall automatically terminate upon his death.

(b) Disability. The Company may terminate the Executive's employment if he is disabled and unable to perform the essential functions of the Executive's then existing position or positions under this Agreement with or without reasonable accommodation for a period of 180 days (which need not be consecutive) in any 12-month period. If any question shall arise as to

whether during any period the Executive is disabled so as to be unable to perform the essential functions of the Executive's then existing position or positions with or without reasonable accommodation, the Executive may, and at the request of the Company shall, submit to the Company a certification in reasonable detail by a physician selected by the Company to whom the Executive or the Executive's guardian has no reasonable objection as to whether the Executive is so disabled or how long such disability is expected to continue, and such certification shall for the purposes of this Agreement be conclusive of the issue. The Executive shall cooperate with any reasonable request of the physician in connection with such certification. If such question shall arise and the Executive shall fail to submit such certification, the Company's determination of such issue shall be binding on the Executive. Nothing in this Section 4(b) shall be construed to waive the Executive's rights, if any, under existing law including, without limitation, the Family and Medical Leave Act of 1993, 29 U.S.C. §2601 *et seq*. and the Americans with Disabilities Act, 42 U.S.C. §12101 *et seq*.

(c) Termination by the Company for Cause. At any time during the Term, the Company may terminate the Executive's employment hereunder for Cause. For purposes of this Agreement, "Cause" shall mean: (i) conduct by the Executive constituting a material act of misconduct in connection with the performance of the Executive's duties, including, without limitation, misappropriation of funds or property of the Company or any of its subsidiaries or affiliates other than the occasional, customary and de minimis use of Company property for personal purposes; (ii) the commission by the Executive of (A) any felony; or (B) a misdemeanor involving moral turpitude, deceit, dishonesty or fraud; (iii) any conduct by the Executive that would reasonably be expected to result in material injury or reputational harm to the Company or any of its subsidiaries and affiliates if the Executive were retained in the Executive's position; (iv) continued non-performance by the Executive of the Executive's responsibilities hereunder (other than by reason of the Executive's physical or mental illness, incapacity or disability) which has continued for more than thirty (30) days following written notice of such non-performance from the Board; (v) a breach by the Executive of the Employee Patent, Confidentiality, and Non Solicitation Agreement between the Executive and the Company (the "Confidentiality Agreement"); (vi) a material violation by the Executive of any of the Company's written employment policies; (vii) failure to cooperate with a bona fide internal investigation or an investigation by regulatory or law enforcement authorities, after being instructed by the Company to cooperate, or the willful destruction or failure to preserve documents or other materials known to be relevant to such investigation or the inducement of others to fail to cooperate or to produce documents or other materials in connection with such investigation; or (viii) the Executive's failure to honor his fiduciary duties to the Company.

(d) Termination Without Cause. At any time during the Term, the Company may terminate the Executive's employment hereunder without Cause. Any termination by the Company of the Executive's employment under this Agreement which does not constitute a termination for Cause under Section 5(c) or result from the death or disability of the Executive under Section 5(a) or (b) shall be deemed a termination without Cause.

(e) Termination by the Executive. At any time during the Term, the Executive may terminate his employment hereunder for any reason, including but not limited to Good Reason. If the Executive provides notice to the Company under Section 1 that he elects to discontinue the extensions, such action shall be deemed a voluntary termination by the Executive

and one without Good Reason. For purposes of this Agreement, "Good Reason" shall mean that the Executive has complied with the "Good Reason Process" (hereinafter defined) following the occurrence of any of the following events after a Change in Control: (i) a material diminution in the Executive's responsibilities, authority or duties; (ii) a material diminution in the Executive's Base Salary; (iii) a material change in the geographic location at which the Executive provides services to the Company; or (iv) the material breach of this Agreement by the Company. "Good Reason Process" shall mean that (i) the Executive reasonably determines in good faith that a "Good Reason" condition has occurred; (ii) the Executive notifies the Company in writing of the occurrence of the Good Reason condition within sixty (60) days of the occurrence of such condition; (iii) the Executive cooperates in good faith with the Company's efforts, for a period not less than 30 days following such notice (the "Cure Period"), to remedy the condition; (iv) notwithstanding such efforts, the Good Reason condition continues to exist; and (v) the Executive terminates his employment within sixty (60) days after the end of the Cure Period. If the Company cures the Good Reason condition during the Cure Period, Good Reason shall be deemed not to have occurred.

(f) Notice of Termination. Except for termination as specified in Section 5(a), any termination of the Executive's employment by the Company or any such termination by the Executive shall be communicated by written Notice of Termination to the other party hereto. For purposes of this Agreement, a "Notice of Termination" shall mean a notice which shall indicate the specific termination provision in this Agreement relied upon.

(g) Date of Termination. "Date of Termination" shall mean: (i) if the Executive's employment is terminated by his death, the date of his death; (ii) if the Executive's employment is terminated by the Company for Cause under Section 5(c), the date on which Notice of Termination is given; (iii) if the Executive's employment is terminated by the Company under Section 5(b) or 5(d), thirty (30) days after the date on which a Notice of Termination is given; (iv) if the Executive's employment is terminated by the Executive under Section 5(e) without Good Reason, thirty (30) days after the date on which a Notice of Termination is given, and (v) if the Executive's employment is terminated by the Executive under Section 5(e) with Good Reason, the date on which a Notice of Termination is given after the end of the Cure Period. Notwithstanding the foregoing, in the event that the Executive gives a Notice of Termination to the Company, the Company may unilaterally accelerate the Date of Termination and such acceleration shall not constitute a termination by the Company for purposes of this Agreement.

6. Compensation Upon Termination.

(a) Termination Generally. If the Executive's employment with the Company is terminated for any reason during the Term, the Company shall pay or provide to the Executive (or to his authorized representative or estate) any earned but unpaid base salary, incentive compensation determined by the Board to be earned but not yet paid, unpaid expense reimbursements, accrued but unused vacation and any vested benefits the Executive may have under the Company's Employee Benefit Plans through the Date of Termination (the "Accrued Benefit"). The Executive shall not be entitled to receive any other termination payments or benefits from the Company except as specifically provided in Section 6(b) or Section 7.

(b) Termination by the Company Without Cause. Except as provided in Section 7, if the Executive's employment is terminated by the Company without Cause as provided in Section 5(d), then the Company shall, through the Date of Termination, pay the Executive his Accrued Benefit. Except as provided in Section 7, if (i) the Executive's employment is terminated by the Company without Cause as provided in Section 5(d), (ii) the Executive signs a general release of claims in a form and manner satisfactory to the Company (the "Release") within 21 days of the receipt of the Release and does not revoke such Release during the seven-day revocation period (if applicable), and (iii) the Executive complies with the Confidentiality Agreement, then

A. The Company shall pay the Executive an amount equal to the sum of one (1) times the Executive's Base Salary. Such amount shall be paid out either in a lump sum or in installments, per the discretion of the Company, and commencing on the first payroll date after the Date of Termination or expiration of the seven-day revocation period for the Release, whichever is later.

B. As of the Date of Termination, all vested stock options held by the Executive shall be exercisable for twelve (12) months following the Date of Termination; and any unvested stock options, restricted stock or other stock-based equity award will be immediately forfeited upon the Date of Termination.

C. Executive's coverage under the Company's group health insurance will extend through the end of the month in which the Date of Termination occurs. Executive may elect COBRA continuation coverage for the group health plans. Notification of conditions and premiums costs to continue health insurance will be provided to Executive following termination. Executive will be responsible for payment of premiums for health insurance coverage secured after the end of the month in which the Date of Termination occurs. In consideration of the loss of various benefits provided by the Company, the Company shall choose to either provide a lump sum payment to Executive equal to twelve (12) times the Company's share of the monthly health insurance premium for the health insurance plan in force on the Date of Termination, less applicable withholdings and deductions OR provide a monthly subsidy for a period of twelve (12) months and equivalent to the Company's share of the monthly health insurance premium for the health insurance plan in force on the Date of Termination to offset the Executive's COBRA cost.

D. The Company shall have no obligation to make any further payments (salary, bonus or otherwise) or provide any further benefits to Executive except as otherwise provided under the applicable terms of this Agreement or the Company's Employee Benefit Plans.

7. Change in Control Payment. The provisions ofthis Section 7 set forth certain terms regarding the Executive's rights and obligations upon the occurrence of a Change in Control of the Company. These provisions are intended to assure and encourage in advance the Executive's continued attention and dedication to his assigned duties and his objectivity during the pendency and after the occurrence of any such event. These provisions shall apply in lieu of, and expressly supersede, the provisions of Section 6(b) regarding severance pay and benefits upon a termination

of employment, if such termination of employment occurs within 12 months after the occurrence of the first event constituting a Change in Control, provided that such first event occurs during the Term. These provisions shall terminate and be of no further force or effect beginning 12 months after the occurrence of a Change in Control.

(a) Change in Control. If (i) within twelve (12) months after a Change in Control, the Executive's employment is terminated by the Company without Cause as provided in Section 5(d) or the Executive terminates his employment for Good Reason as provided in Section 5(e), (ii) the Executive signs the Release within twenty-one (21) days of the receipt of the Release and does not revoke the Release during the seven-day revocation period (if applicable), and (iii) the Executive complies with the Confidentiality Agreement, then

A. The Company shall pay to the Executive an amount equal to (i) one-hundred percent (100%) the Executive's average annual base salary over the three (3) fiscal years immediately prior to the Termination Date (or the Executive's annual base salary in effect immediately prior to the Change in Control, if higher) and (ii) one-hundred percent (100%) of the Executive's average annual bonus over the three (3) fiscal years immediately prior to the Change in Control (or the Executive's annual bonus for the last fiscal year immediately prior to the Change in Control, if higher). Such amounts shall be paid out either in a lump sum or in installments, per the discretion of the Company, and commencing on the first payroll date after the Date of Termination or expiration of the seven-day revocation period for the Release, whichever is later, subject to Section 7(b) regarding additional limitations and Section 8 regarding IRC Section 409A.

B. Notwithstanding anything to the contrary in any applicable option agreement or stock-based award agreement, on the Termination Date the Executive shall vest in such portion of his stock options and other stock-based awards as he would have vested in if he had remained employed by the Company for twelve (12) months following the Termination Date.

C. Executive's coverage under the Company's group health insurance will extend through the end of the month in which the Date of Termination occurs. Executive may elect COBRA continuation coverage for the group health plans. Notification of conditions and premiums costs to continue health insurance will be provided to Executive following termination. Executive will be responsible for payment of premiums for health insurance coverage secured after the end of the month in which the Date of Termination occurs. In consideration of the loss of various benefits provided by the Company, the Company shall choose to either provide a lump sum payment to Executive equal to twelve (12) times the Company's share of the monthly health insurance premium for the health insurance plan in force on the Date of Termination, less applicable withholdings and deductions OR provide a monthly subsidy for a period of twelve (12) months and equivalent to the Company's share of the monthly health insurance premium for the health insurance plan in force on the Date of Termination to offset the Executive's COBRA cost.

D. The Company shall pay to the Executive all reasonable legal and arbitration fees and expenses incurred by the Executive in obtaining or enforcing any right or benefit provided by this Agreement, except in cases involving frivolous or bad faith litigation.

E. The Company shall have no obligation to make any further payments (salary, bonus or otherwise) or provide any further benefits to Executive except as otherwise provided under the applicable terms of this Agreement or the Company's Employee Benefit Plans.

(b) Additional Limitation.

(i) Anything in this Agreement to the contrary notwithstanding, in the event that any compensation, payment or distribution by the Company to or for the benefit of the Executive, whether paid or payable or distributed or distributable pursuant to the terms of this Agreement or otherwise (the "Severance Payments"), would be subject to the excise tax imposed by Section 4999 of the Code, the following provisions shall apply:

A. If the Severance Payments, reduced by the sum of (1) the Excise Tax and (2) the total of the Federal, state, and local income and employment taxes payable by the Executive on the amount of the Severance Payments which are in excess of the Threshold Amount, are greater than or equal to the Threshold Amount, the Executive shall be entitled to the full benefits payable under this Agreement.

B. If the Threshold Amount is less than (x) the Severance Payments, but greater than (y) the Severance Payments reduced by the sum of (1) the Excise Tax and (2) the total of the federal, state, and local income and employment taxes on the amount of the Severance Payments which are in excess of the Threshold Amount, then the benefits payable under this Agreement shall be reduced (but not below zero) to the extent necessary so that the maximum Severance Payments shall not exceed the Threshold Amount.

(ii) For the purposes of this Section 7(b), "Threshold Amount" shall mean three times the Executive's "base amount" within the meaning of Section 280G(b)(3) of the Code and the regulations promulgated thereunder less one dollar ($1.00); and "Excise Tax" shall mean the excise tax imposed by Section 4999 of the Code, and any interest or penalties incurred by the Executive with respect to such excise tax.

(iii) The determination as to which of the alternative provisions of Section 7(b)(i) shall apply to the Executive shall be made by a nationally recognized accounting firm selected by the Company (the "Accounting Firm"), which shall provide detailed supporting calculations both to the Company and the Executive within fifteen (15) business days of the Date of Termination, if applicable, or at such earlier time as is reasonably requested by the Company or the Executive. For purposes of determining which of the alternative provisions of Section 7(b)(i) shall apply, the Executive shall be

deemed to pay federal income taxes at the highest marginal rate of federal income taxation applicable to individuals for the calendar year in which the determination is to be made, and state and local income taxes at the highest marginal rates of individual taxation in the state and locality of the Executive's residence on the Date of Termination, net of the maximum reduction in federal income taxes which could be obtained from deduction of such state and local taxes. Any determination by the Accounting Firm shall be binding upon the Company and the Executive.

(c) Definitions. For purposes of this Section 7, the following terms shall have the following meanings:

"Change in Control" shall be deemed to have occurred in any one of the following events:

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

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

(iii) Upon (A) the consummation of any consolidation or merger of the Company where the shareholders of the Company, immediately prior to the consolidation or merger, did not, immediately after the consolidation or merger, beneficially own (as such term is defined in Rule 13d-3 of the Exchange Act), directly or indirectly, shares representing in the aggregate more than 50% of the voting shares of the corporation issuing cash or securities in the consolidation or merger (or of its ultimate parent corporation, if

any), (B) the consummation of any sale, lease, exchange or other transfer (in one transaction or a series of transactions contemplated or arranged by any party as a single plan) of all or substantially all of the assets of the Company or (C) the completion of a liquidation or dissolution that has been approved by the stockholders of the Company; or

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

Notwithstanding the foregoing, a "Change in Control" shall not be deemed to have occurred for purposes of the foregoing clause (i) solely as the result of an acquisition of securities by the Company which, by reducing the number of shares of Stock outstanding, increases the proportionate number of shares of Stock beneficially owned by any person to 25% or more of the shares of Stock then outstanding; provided, however, that if any such person shall at any time following such acquisition of securities by the Company become the beneficial owner of any additional shares of Stock (other than pursuant to a stock split, stock dividend, or similar transaction) and such person immediately thereafter is the beneficial owner of 25% or more of the shares of Stock then outstanding, then a "Change in Control" shall be deemed to have occurred for purposes of the foregoing clause (i), as applicable.

8. Section 409A.

(a) Anything in this Agreement to the contrary notwithstanding, if at the time of the Executive's "separation from service" within the meaning of Section 409A of the Code, the Company determines that the Executive is a "specified employee" within the meaning of Section 409A(a)(2)(B)(i) of the Code, and to the extent any payment or benefit that the Executive becomes entitled to under this Agreement would be considered deferred compensation subject to the 20 percent additional tax imposed pursuant to Section 409A(a) of the Code as a result of the application of Section 409A(a)(2)(B)(i) of the Code, then no such payment shall be payable and no such benefit shall be provided prior to the date that is the earlier of (A) six months and one day after the Executive's separation from service, or (B) the Executive's death.

(b) All in-kind benefits provided and expenses eligible for reimbursement under this Agreement shall be provided by the Company or incurred by the Executive during the time periods set forth in this Agreement. All reimbursements shall be paid as soon as administratively practicable, but in no event shall any reimbursement be paid after the last day of the taxable year following the taxable year in which the expense was incurred. The amount of in kind benefits provided or reimbursable expenses incurred in one taxable year shall not affect the in-kind benefits to be provided or the expenses eligible for reimbursement in any other taxable year. Such right to reimbursement or in-kind benefits is not subject to liquidation or exchange for another benefit.

(c) To the extent that any payment or benefit described in this Agreement constitutes "non-qualified deferred compensation" under Section 409A of the Code, and to the

extent that such payment or benefit is payable upon the Executive's termination of employment, then such payments or benefits shall be payable only upon the Executive's "separation from service." The determination of whether and when a separation from service has occurred shall be made in accordance with the presumptions set forth in Treasury Regulation Section 1.409A-1(h).

(d) The parties intend that this Agreement will be administered in accordance with Section 409A of the Code. To the extent that any provision of this Agreement is ambiguous as to its compliance with Section 409A of the Code, the provision shall be read in such a manner so that all payments hereunder comply with Section 409A of the Code. The parties agree that this Agreement may be amended, as reasonably requested by either party, and as may be necessary to fully comply with Section 409A of the Code and all related rules and regulations in order to preserve the payments and benefits provided hereunder without additional cost to either party.

(e) The Company makes no representation or warranty and shall have no liability to the Executive or any other person if any provisions of this Agreement are determined to constitute deferred compensation subject to Section 409A of the Code but do not satisfy an exemption from, or the conditions of, such Section.

9. Covenants.

(a) Confidentiality Agreement. The Executive acknowledges and agrees that the Employee Patent, Confidentiality, and Non-Solicitation Agreement shall continue in effect as if set forth herein.

(b) Litigation and Regulatory Cooperation. During and after the Term, the Executive shall cooperate fully with the Company and all of its subsidiaries and affiliates (including its and their outside counsel) in connection with the contemplation, prosecution and defense of all phases of existing, past and future claims or actions which relate to events or occurrences that transpired while the Executive was employed by the Company. The Executive's full cooperation in connection with such claims or actions shall include, but not be limited to, being available to meet with counsel to prepare for discovery or trial and to act as a witness on behalf of the Company at mutually convenient times. During and after the Term, the Executive also shall cooperate fully with the Company in connection with any investigation or review of any federal, state or local regulatory authority as any such investigation or review relates to events or occurrences that transpired while the Executive was employed by the Company. The Company shall reimburse the Executive for any pre-approved reasonable business travel expenses that are incurred in connection with the Executive's performance of obligations pursuant to this Section 8(a) after receipt of appropriate documentation consistent with the Company's business expense reimbursement policy.

(c) Disparagement. During and after the Term, the Executive agrees not to make any disparaging statements concerning the Company or any of its subsidiaries, affiliates or current or former officers, directors, shareholders, employees or agents ("Company Parties"). The Executive further agrees not to take any actions or conduct himself in any way that would reasonably be expected to affect adversely the reputation or good will of the Company or any of the Company Parties. The Executive further agrees that he shall not voluntarily provide information to or otherwise cooperate with any individual or entity that is contemplating or

pursuing litigation against the Company or any of the Company Parties or that is undertaking any investigation or review of the Company's or any of the Company Parties' activities or practices. Nothing in this Agreement prevents Executive from filing a charge with the Equal Employment Opportunity Commission ("EEOC") or participating in any investigation or proceeding conducted by the EEOC nor does it limit Executive's ability to file a complaint with the Securities and Exchange Commission ("SEC") or communicate with the SEC or otherwise participate in any investigation or proceeding that may be conducted by the SEC nor does it prevent Executive from disclosing information about unlawful acts in the workplace, including, but not limited to, sexual harassment. These nondisparagement obligations shall not in any way affect the Executive's obligation to testify truthfully in any legal proceeding.

(d) Return of Property. As soon as possible in connection with any termination of the Executive's employment under this Agreement or when otherwise requested by the Company, the Executive shall return to the Company all Company property, including, without limitation, computer equipment, software, keys and access cards, credit cards, files and any documents (including computerized data and any copies made of computer data or software) containing information concerning the Company, its business or its business relationships (in the latter two cases, actual or prospective). The Executive shall also commit to deleting and finally purging any duplicates of files or documents that may contain Company information from any computer or other device that remains his property after any Date of Termination. If requested by the Company, Executive will provide a written acknowledgement and certification that all such Company property has been returned and electronic data permanently deleted and that Executive has not shared or provided such information to any third parties. Executive acknowledges and agrees that failure to surrender such property will cause irreparable damage to the Company.

(e) Injunction. The Executive agrees that it would be difficult to measure any damages caused to the Company which might result from any breach by the Executive of his obligations under this Agreement, and that in any event money damages would be an inadequate remedy for any such breach. Accordingly, subject to Section 10 of this Agreement, the Executive agrees that if the Executive breaches, or proposes to breach, any provision of this Agreement, the Company shall be entitled, in addition to all other remedies that it may have, to an injunction or other appropriate equitable relief to restrain any such breach without showing or proving any actual damage to the Company.

10. Settlement and Arbitration of Disputes. In the event of any dispute or claim relating to or arising out of the employment relationship, Executive and the Company agree that (i) any and all disputes between Executive and the Company shall be fully and finally resolved on an individual basis only (and not as a class or representative action) by binding arbitration, (ii) Executive is waiving any and all rights to a jury trial but all court remedies will be available in arbitration, (iii) all disputes shall be resolved by a neutral arbitrator who shall issue a written opinion, (iv) the arbitration shall provide for adequate discovery, and (v) the Company shall pay all but the first $200 of the arbitration fees. The arbitration shall be conducted through JAMS before a single neutral arbitrator, in accordance with the JAMS Employment Arbitration Rules then in effect. The JAMS rules may be found and reviewed at http://www.jamsadr.com/rules-employment-arbitration. If Executive is unable to access these rules, the Company will provide a hardcopy upon request. As in any arbitration, the burden of proof shall be allocated as provided by applicable law. The only claims not covered by this agreement to arbitrate are claims that are

not arbitrable by law, which include claims for workers' compensation, unemployment compensation benefits, suits brought under the Private Attorneys General Act (Cal. Labor Code § 2698), and any claims which are expressly excluded from binding arbitration by controlling law or public policy. Either party may apply to a court of competent jurisdiction for temporary or preliminary injunctive relief in connection with a claim covered by this agreement to arbitrate, but only upon the ground that the award to which that party may be entitled may be rendered ineffectual without such relief. Such resort to temporary equitable relief shall be pending in and in aid of arbitration only, and in such cases the trial on the merits of the action will occur in front of, and will be decided by, the arbitrator, who will have the same ability to order legal or equitable remedies as could a court of general jurisdiction.

11. Integration. This Agreement constitutes the entire agreement and understanding between the parties with respect to the subject matter hereof and supersedes all prior agreements between the parties concerning such subject matter, except the Confidentiality Agreement, which remains in full force and effect.

12. Withholding. All payments made by the Company to the Executive under this Agreement shall be net of any tax or other amounts required to be withheld by the Company under applicable law.

13. Successor to the Executive. This Agreement shall inure to the benefit of and be enforceable by the Executive's personal representatives, executors, administrators, heirs, distributees, devisees and legatees. In the event of the Executive's death after his termination of employment but prior to the completion by the Company of all payments due him under this Agreement, the Company shall continue such payments to the Executive's beneficiary designated in writing to the Company prior to his death (or to his estate, if the Executive fails to make such designation).

14. Conditions of Offer. The Company's offer of employment is conditioned on Executive's submission of satisfactory proof of legal authorization to work in the United States and, if requested, Executive's completion of a standard background check to the satisfaction of the Company. This offer is also conditioned on Executive signing and returning the Company's Employee Patent, Confidentiality, and Non-Solicitation Agreement.

15. Enforceability. If any portion or provision of this Agreement (including, without limitation, any portion or provision of any section of this Agreement) shall to any extent be declared illegal or unenforceable by a court of competent jurisdiction, then the remainder of this Agreement, or the application of such portion or provision in circumstances other than those as to which it is so declared illegal or unenforceable, shall not be affected thereby, and each portion and provision of this Agreement shall be valid and enforceable to the fullest extent permitted by law.

16. Waiver. No waiver of any provision hereof shall be effective unless made in writing and signed by the waiving party. The failure of any party to require the performance of any term or obligation of this Agreement, or the waiver by any party of any breach of this Agreement, shall not prevent any subsequent enforcement of such term or obligation or be deemed a waiver of any subsequent breach.

17. Notices. Any notices, requests, demands and other communications provided for by this Agreement shall be sufficient if in writing and delivered in person or sent by a nationally recognized overnight courier service or by registered or certified mail, postage prepaid, return receipt requested, to the Executive at the last address the Executive has filed in writing with the Company or, in the case of the Company, at its main offices, attention of the Board.

18. Effect on Other Plans. Nothing in this Agreement shall be construed to limit the rights of the Executive under the Company's benefit plans, programs or policies except (a) as otherwise provided herein, and (b) that the Executive shall have no rights to any severance or similar benefits under any severance pay plan, policy or practice.

19. Amendment. This Agreement may be amended or modified only by a written instrument signed by the Executive and by a duly authorized representative of the Company.

20. Governing Law. This is a California contract and shall be construed under and be governed in all respects by the laws of the State of California, without giving effect to the conflict oflaws principles of such State. With respect to any disputes concerning federal law, such disputes shall be determined in accordance with the law as it would be interpreted and applied by the United States Court of Appeals for the Ninth Circuit.

21. Counterparts. This Agreement may be executed in any number of counterparts, each of which when so executed and delivered shall be taken to be an original; but such counterparts shall together constitute one and the same document.

22. Successor to Company. The Company shall require any successor (whether direct or indirect, by purchase, merger, consolidation or otherwise) to all or substantially all of the business or assets of the Company expressly to assume and agree to perform this Agreement to the same extent that the Company would be required to perform it if no succession had taken place. Failure of the Company to obtain an assumption of this Agreement at or prior to the effectiveness of any succession shall be a breach of this Agreement and shall constitute Good Reason if the Executive elects to terminate employment.

23. Gender Neutral. Wherever used herein, a pronoun in the masculine gender shall be considered as including the feminine gender unless the context clearly indicates otherwise.

24. Survival. The provisions of this Agreement shall survive the termination of this Agreement and/or the termination of the Executive's employment to the extent necessary to effectuate the terms contained herein.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement effective on the date and year first above written.

PLUG POWER INC.

By: /s/ Andy Marsh
Name: Andy Marsh
Title: CEO & President

DIRK OLE HOEFELMANN

By: /s/ Dirk Ole Hoefelmann
Name: Dirk Ole Hoefelmann
Title: General Manager, Electrolyzers

Exhibit 31.1

I, Andrew Marsh, certify that:

1. I have reviewed this quarterly report on Form 10-Q 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: May 9, 2022

by: /s/ Andrew Marsh
Andrew Marsh
Chief Executive Officer

Exhibit 31.2

I, Paul B. Middleton, certify that:

1. I have reviewed this quarterly report on Form 10-Q 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: May 9, 2022

by: /s/ Paul B. Middleton
Paul B. Middleton
Chief Financial Officer

Exhibit 32.1

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 Quarterly Report of Plug Power Inc. (the "Company") on Form 10-Q for the period ending March 31, 2022 as filed with the Securities and Exchange Commission (the "SEC") on the date hereof (the "Report"), I, Andrew Marsh, Chief Executive Officer of the Company, certify, solely pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, 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

May 9, 2022

Exhibit 32.2

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 Quarterly Report of Plug Power Inc. (the "Company") on Form 10-Q for the period ending March 31, 2022 as filed with the Securities and Exchange Commission (the "SEC") on the date hereof (the "Report"), I, Paul B. Middleton, Interim 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, 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

May 9, 2022