

UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
Washington, D.C. 20549

FORM 10-Q

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

For the quarterly period ended September 30, 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: 001-40209

**Heliogen, Inc.**

(Exact name of registrant as specified in its charter)

Delaware

(State or other jurisdiction of  
incorporation or organization)

130 West Union Street, Pasadena California

(Address of Principal Executive Offices)

85-4204953

(I.R.S. Employer  
Identification No.)

91103

(Zip Code)

(626) 720-4530

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, \$0.0001 par value per share	HLGN	New York Stock Exchange
Warrants, each whole warrant exercisable for shares of Common stock at an exercise price of \$11.50 per share	HLGN.W	New York Stock Exchange

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, a 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	<input type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input checked="" type="checkbox"/>	Smaller reporting company	<input checked="" type="checkbox"/>
		Emerging growth company	<input checked="" type="checkbox"/>

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 Act). Yes  No

The registrant had 191,442,304 shares of common stock outstanding as of November 4, 2022.

**Table of Contents**

	<u>Page</u>
<a href="#">Forward-Looking and Cautionary Statements</a>	<a href="#">3</a>
<b><a href="#">Part I - Financial Information</a></b>	
<a href="#">Item 1. Financial Information (Unaudited)</a>	<a href="#">5</a>
<a href="#">Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations</a>	<a href="#">23</a>
<a href="#">Item 3. Quantitative and Qualitative Disclosures About Market Risk</a>	<a href="#">29</a>
<a href="#">Item 4. Controls and Procedures</a>	<a href="#">29</a>
<b><a href="#">Part II - Other Information</a></b>	
<a href="#">Item 1. Legal Proceedings</a>	<a href="#">31</a>
<a href="#">Item 1A. Risk Factors</a>	<a href="#">31</a>
<a href="#">Item 2. Unregistered Sales of Equity Securities and Use of Proceeds</a>	<a href="#">31</a>
<a href="#">Item 3. Defaults Upon Senior Securities</a>	<a href="#">31</a>
<a href="#">Item 4. Mine Safety Disclosures</a>	<a href="#">31</a>
<a href="#">Item 5. Other Information</a>	<a href="#">31</a>
<a href="#">Item 6. Exhibits</a>	<a href="#">32</a>
<a href="#">Signatures</a>	<a href="#">33</a>

### Cautionary Note Regarding Forward-Looking Statements

This Quarterly Report on Form 10-Q contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended (the “Securities Act”), and Section 21E of the Securities Exchange Act of 1934, as amended (the “Exchange Act”). We have based these forward-looking statements on our current expectations and projections about future events. All statements, other than statements of present or historical fact included in this Quarterly Report on Form 10-Q regarding our future financial performance, as well as our strategy, future operations, financial position, estimated revenues, and losses, projected costs, prospects, plans and objectives of management are forward-looking statements. Any statements that refer to projections, forecasts or other characterizations of future events or circumstances, including any underlying assumptions, are forward-looking statements. In some cases, you can identify forward-looking statements by terminology such as “anticipate,” “believe,” “continue,” “could,” “estimate,” “expect,” “intends,” “may,” “might,” “plan,” “possible,” “potential,” “predict,” “project,” “should,” “will,” “would” or the negative of such terms or other similar expressions. These forward-looking statements are based on management’s current expectations, assumptions, hopes, beliefs, intentions and strategies regarding future events and are based on currently available information as to the outcome and timing of future events. We caution you that these forward-looking statements are subject to all of the risks and uncertainties, most of which are difficult to predict and many of which are beyond our control, incident to our business.

As a result of a number of known and unknown risks and uncertainties, our actual results or performance may be materially different from those expressed or implied by these forward-looking statements. Some factors that could cause actual results to differ include:

- our ability to recognize the anticipated benefits of the business combination (the “Business Combination”) with Athena Technology Acquisition Corp (“Athena”), which may be affected by, among other things, our ability to grow and manage growth profitably;
- our financial and business performance, including risk of uncertainty in our financial projections and business metrics and any underlying assumptions thereunder;
- changes in our business and strategy, future operations, financial position, estimated revenues and losses, projected costs, prospects and plans;
- our ability to execute our business model, including market acceptance of our planned products and services and achieving sufficient production volumes at acceptable quality levels and prices;
- changes in domestic and foreign business, market, financial, political, legal conditions and applicable laws and regulations;
- our ability to grow market share in our existing markets or new markets we may enter;
- our ability to achieve and maintain profitability in the future;
- our ability to access sources of capital to finance operations, growth and future capital requirements;
- our ability to maintain and enhance our products and brand, and to attract and retain customers;
- our ability to find new partners for product offerings;
- the success of strategic relationships with third parties;
- our ability to scale in a cost-effective manner;
- developments and projections relating to our competitors and industry;
- the impact of the COVID-19 pandemic and Russia’s invasion of Ukraine on our business, including, but not limited to, supply chain disruptions;
- our expectations regarding our ability to obtain and maintain intellectual property protection and not infringe on the rights of others;
- our ability to find and retain critical employee talent and key personnel;
- the possibility that we may be adversely impacted by other economic, business, and/or competitive factors;

[Table of Contents](#)

- the possibility that our remediation plan may not successfully address the underlying causes of the material weaknesses in our internal control over financial reporting;
- future exchange and interest rates;
- the outcome of any known and unknown litigation and regulatory proceedings; and
- other risks and uncertainties, including those disclosed under “Item 1A. Risk Factors” contained in Part I of our latest Annual Report on Form 10-K/A, and the risk factors and other cautionary statements contained in other filings that have been made or will be made with the Securities and Exchange Commission by the Company.

Given these risks and uncertainties, you should not place undue reliance on these forward-looking statements. Should one or more of the risks or uncertainties described in this Quarterly Report on Form 10-Q, or should underlying assumptions prove incorrect, actual results and plans could differ materially from those expressed in any forward-looking statements. Additional information concerning these and other factors that may impact the operations and projections discussed herein are disclosed under “Item 1A. Risk Factors” contained in Part I of our latest Annual Report on Form 10-K/A and in our periodic filings with the SEC. Our SEC filings are available publicly on the SEC’s website at [www.sec.gov](http://www.sec.gov).

You should read this Quarterly Report on Form 10-Q with the understanding that our actual future results, levels of activity and performance as well as other events and circumstances may be materially different from what we expect. We qualify all of our forward-looking statements by these cautionary statements.

**Part I - Financial Information**

**Item 1. Financial Information**

**Heliogen, Inc.**  
**Condensed Consolidated Balance Sheets**  
**(\$ in thousands, except share data)**  
**(Unaudited)**

	September 30, 2022	December 31, 2021 (As Restated)
<b>ASSETS</b>		
Cash and cash equivalents	\$ 35,444	\$ 190,081
Restricted cash	655	—
Investments, available-for-sale (amortized cost of \$129,344 and \$32,349, respectively)	124,034	32,332
Receivables	6,585	3,896
Prepaid and other current assets	6,121	874
<b>Total current assets</b>	<b>172,839</b>	<b>227,183</b>
Operating lease right-of-use assets	15,165	16,093
Property, plant, and equipment, net of accumulated depreciation of \$2,012 and \$707, respectively	10,092	4,102
Goodwill	926	4,204
Intangible assets, net of accumulated amortization of \$579 and \$27, respectively	3,232	147
Restricted cash	1,500	1,500
Other long-term assets	13,809	4,219
<b>Total assets</b>	<b>\$ 217,563</b>	<b>\$ 257,448</b>
<b>LIABILITIES AND SHAREHOLDERS' EQUITY</b>		
Trade payables	\$ 2,335	\$ 4,645
Contract liabilities	8,540	513
Contract loss provisions	30,526	397
Accrued expenses and other current liabilities	7,410	6,974
<b>Total current liabilities</b>	<b>48,811</b>	<b>12,529</b>
Debt	22	35
Operating lease liabilities, net of current portion	14,361	14,183
Warrant liability	1,885	14,563
Other long-term liabilities	1,233	2,080
<b>Total liabilities</b>	<b>66,312</b>	<b>43,390</b>
<b>Commitments and contingencies (see Note 9)</b>		
<b>Convertible preferred stock</b> – \$0.0001 par value; 10,000,000 shares authorized and no shares outstanding as of September 30, 2022 and December 31, 2021	—	—
<b>Shareholders' equity</b>		
Common stock, \$0.0001 par value; 500,000,000 shares authorized; 191,269,480 shares issued and outstanding (excluding restricted shares of 135,271) as of September 30, 2022 and 183,367,037 shares issued and outstanding (excluding restricted shares of 481,301) as of December 31, 2021	19	18
Additional paid-in capital	425,851	380,624
Accumulated other comprehensive loss	(1,025)	(4)
Accumulated deficit	(273,594)	(166,580)
<b>Total shareholders' equity</b>	<b>151,251</b>	<b>214,058</b>
<b>Total liabilities, convertible preferred stock and shareholders' equity</b>	<b>\$ 217,563</b>	<b>\$ 257,448</b>

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

**Heliogen, Inc.**  
**Condensed Consolidated Statements of Operations and Comprehensive Loss**  
(\$ in thousands, except per share and share data)  
(Unaudited)

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2022	2021	2022	2021
<b>Revenue:</b>				
Services revenue	\$ 1,367	\$ 2,202	\$ 4,375	\$ 3,563
Grant revenue	1,733	—	4,656	—
Total revenue	3,100	2,202	9,031	3,563
<b>Cost of revenue:</b>				
Cost of services revenue (excluding depreciation and amortization)	1,690	1,375	5,668	2,736
Cost of grant revenue	1,733	—	4,656	—
Provision for contract losses	—	—	33,737	—
Total cost of revenue	3,423	1,375	44,061	2,736
<b>Gross profit (loss)</b>	<b>(323)</b>	<b>827</b>	<b>(35,030)</b>	<b>827</b>
<b>Operating expenses:</b>				
Selling, general, and administrative	18,268	8,687	60,733	15,099
Research and development	11,168	4,618	26,448	8,891
Total operating expenses	29,436	13,305	87,181	23,990
<b>Operating loss</b>	<b>(29,759)</b>	<b>(12,478)</b>	<b>(122,211)</b>	<b>(23,163)</b>
Interest income, net	259	197	666	407
SAFE instruments remeasurement	—	(15,533)	—	(62,993)
Gain (loss) on warrant remeasurement	369	(322)	12,679	(2,604)
Other income (expense), net	1,256	(140)	1,071	(312)
<b>Net loss before taxes</b>	<b>(27,875)</b>	<b>(28,276)</b>	<b>(107,795)</b>	<b>(88,665)</b>
Income tax benefit	46	—	781	—
<b>Net loss</b>	<b>(27,829)</b>	<b>(28,276)</b>	<b>(107,014)</b>	<b>(88,665)</b>
<b>Other comprehensive income (loss), net of taxes</b>				
Unrealized (losses) gains on available-for-sale securities	(18)	7	(524)	(7)
Cumulative translation adjustment	(173)	(57)	(497)	(57)
<b>Total comprehensive loss</b>	<b>\$ (28,020)</b>	<b>\$ (28,326)</b>	<b>\$ (108,035)</b>	<b>\$ (88,729)</b>
<b>Loss per share:</b>				
Loss per share – Basic and Diluted	\$ (0.14)	\$ (2.45)	\$ (0.57)	\$ (8.32)
Weighted average number of shares outstanding – Basic and Diluted	192,580,125	11,545,919	188,827,770	10,650,897

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

**Heliogen, Inc.**  
**Condensed Consolidated Statements of Convertible Preferred Stock and Shareholders' Equity (Deficit)**  
(\$ in thousands, except share data)  
(Unaudited)

	Convertible Preferred Stock		Shareholders' Equity (Deficit)					
	Shares	Amount	Common Stock		Additional Paid-in Capital	Accumulated Other Comprehensive Loss	Accumulated Deficit	Total
			Shares	Amount				
<b>June 30, 2022</b>	—	\$ —	190,093,226	\$ 19	\$ 415,526	\$ (834)	\$ (245,765)	\$ 168,946
Net loss	—	—	—	—	—	—	(27,829)	(27,829)
Other comprehensive loss	—	—	—	—	—	(191)	—	(191)
Share-based compensation	—	—	723,878	—	9,972	—	—	9,972
Shares issued for stock options exercised	—	—	452,376	—	142	—	—	142
Issuance of warrants in connection with vendor agreements	—	—	—	—	80	—	—	80
Issuance of warrants in connection with customer agreements	—	—	—	—	131	—	—	131
<b>September 30, 2022</b>	—	\$ —	191,269,480	\$ 19	\$ 425,851	\$ (1,025)	\$ (273,594)	\$ 151,251
<b>December 31, 2021 (As Restated)</b>	—	\$ —	183,367,037	\$ 18	\$ 380,624	\$ (4)	\$ (166,580)	\$ 214,058
Net loss	—	—	—	—	—	—	(107,014)	(107,014)
Other comprehensive loss	—	—	—	—	—	(1,021)	—	(1,021)
Share-based compensation	—	—	971,954	—	34,478	—	—	34,478
Shares issued for stock options exercised	—	—	6,930,479	1	1,056	—	—	1,057
Shares issued for stock warrants exercised	—	—	10	—	—	—	—	—
Issuance of warrants in connection with vendor agreements	—	—	—	—	134	—	—	134
Issuance of warrants in connection with customer agreements	—	—	—	—	9,559	—	—	9,559
<b>September 30, 2022</b>	—	\$ —	191,269,480	\$ 19	\$ 425,851	\$ (1,025)	\$ (273,594)	\$ 151,251

  

	Convertible Preferred Stock		Shareholders' Equity (Deficit)					
	Shares	Amount	Common Stock		Additional Paid-in Capital	Accumulated Other Comprehensive Loss	Accumulated Deficit	Total
			Shares	Amount				
<b>June 30, 2021</b>	117,886,982	\$ 45,932	10,684,355	\$ 1	\$ 2,134	\$ (14)	\$ (89,561)	\$ (87,440)
Net loss	—	—	—	—	—	—	(28,276)	(28,276)
Other comprehensive loss	—	—	—	—	—	(50)	—	(50)
Share-based compensation	—	—	—	—	1,485	—	—	1,485
Shares issued for stock options exercised	—	—	1,302,054	1	123	—	—	124
<b>September 30, 2021</b>	117,886,982	\$ 45,932	11,986,409	\$ 2	\$ 3,742	\$ (64)	\$ (117,837)	\$ (114,157)
<b>December 31, 2020, as reported</b>	58,554,536	\$ 45,932	4,053,489	\$ 4	\$ 1,306	\$ —	\$ (29,172)	\$ (27,862)
Retroactive application of Exchange Ratio	59,332,446	—	4,107,339	(3)	3	—	—	—
<b>December 31, 2020</b>	117,886,982	\$ 45,932	8,160,828	\$ 1	\$ 1,309	\$ —	\$ (29,172)	\$ (27,862)
Net loss	—	—	—	—	—	—	(88,665)	(88,665)
Other comprehensive loss	—	—	—	—	—	(64)	—	(64)
Share-based compensation	—	—	—	—	2,049	—	—	2,049
Shares issued for stock options exercised	—	—	3,626,266	1	354	—	—	355
Shares issued for stock warrants exercised	—	—	199,315	—	30	—	—	30
<b>September 30, 2021</b>	117,886,982	\$ 45,932	11,986,409	\$ 2	\$ 3,742	\$ (64)	\$ (117,837)	\$ (114,157)

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

**Heliogen, Inc.**  
**Condensed Consolidated Statements of Cash Flows**  
(\$ in thousands)  
(Unaudited)

	<b>Nine Months Ended September 30,</b>	
	<b>2022</b>	<b>2021</b>
<b>CASH FLOWS FROM OPERATING ACTIVITIES:</b>		
Net loss	\$ (107,014)	\$ (88,665)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	2,289	272
Share-based compensation	34,478	2,049
SAFE instruments remeasurement	—	62,993
Change in fair value of warrants	(12,679)	2,604
Change in fair value of contingent consideration	(1,063)	—
Deferred income taxes	(781)	—
Non-cash operating lease expense	1,199	—
Other non-cash operating activities	90	947
Changes in assets and liabilities:		
Receivables	(2,778)	(140)
Prepaid and other current assets	(1,706)	1,170
Other long-term assets	392	(3,864)
Trade payables	(1,061)	1,347
Accrued expenses and other current liabilities	1,128	1,921
Contract liabilities	8,535	1,660
Contract loss provisions	30,235	—
Operating lease liabilities	(810)	(510)
Other long-term liabilities	1	69
<b>Net cash used in operating activities</b>	<b>(49,545)</b>	<b>(18,147)</b>
<b>CASH FLOWS FROM INVESTING ACTIVITIES:</b>		
Capital expenditures	(7,313)	(1,428)
Purchases of available-for-sale investments	(237,986)	(41,647)
Maturities of available-for-sale investments	75,300	4,300
Sales of available-for-sale investments	65,817	—
Acquisition of HelioHeat, net of cash acquired	—	(1,684)
<b>Net cash used in investing activities</b>	<b>(104,182)</b>	<b>(40,459)</b>
<b>CASH FLOWS FROM FINANCING ACTIVITIES:</b>		
Proceeds from SAFE instruments, net of issuance costs of \$30 thousand	—	83,411
Transaction costs paid related to the Business Combination with Athena	(1,274)	—
Repayments on Paycheck Protection Program loan	—	(411)
Proceeds from exercise of stock options	1,019	355
Proceeds from exercise of common stock warrants	—	30
Other financing costs	—	(1,487)
<b>Net cash (used in) provided by financing activities</b>	<b>(255)</b>	<b>81,898</b>
<b>(DECREASE) INCREASE IN CASH, CASH EQUIVALENTS AND RESTRICTED CASH</b>	<b>(153,982)</b>	<b>23,292</b>
<b>CASH, CASH EQUIVALENTS AND RESTRICTED CASH, BEGINNING OF THE PERIOD</b>	<b>191,581</b>	<b>18,334</b>
<b>CASH, CASH EQUIVALENTS AND RESTRICTED CASH, END OF THE PERIOD</b>	<b>\$ 37,599</b>	<b>\$ 41,626</b>

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

**Heliogen, Inc.**  
**Condensed Consolidated Statements of Cash Flows (continued)**  
**(\$ in thousands)**  
**(Unaudited)**

**Supplemental Cash Flow Information**

The following reconciles cash, cash equivalents and restricted cash:

	<b>Nine Months Ended September 30,</b>	
	<b>2022</b>	<b>2021</b>
Cash and cash equivalents	\$ 35,444	\$ 40,126
Restricted cash (current and long-term)	2,155	1,500
Total cash, cash equivalents and restricted cash	<u>\$ 37,599</u>	<u>\$ 41,626</u>

Cash flows related to interest, leases and other non-cash investing and financing activities were as follows:

	<b>Nine Months Ended September 30,</b>	
	<b>2022</b>	<b>2021</b>
<i>Supplemental disclosures:</i>		
Cash paid for interest	\$ —	\$ 3
Cash paid for amounts included in the measurement of operating lease liabilities	—	483
<i>Non-cash investing and financing activities:</i>		
Right-of-use assets obtained in exchange for new operating lease liabilities	\$ 201	\$ 16,685
Right-of-use asset removed upon lease termination	306	—
Fair value of vendor warrants recognized in equity	134	—
Fair value of Project Warrants and Collaboration Warrants recognized in equity	9,559	—
Transaction costs incurred but not yet paid	—	369
Capital expenditures incurred but not yet paid	522	231

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

**Heliogen, Inc.**  
**Notes to the Condensed Consolidated Financial Statements**  
**(Unaudited)**

**1. Organization and Basis of Presentation**

***Background***

Heliogen, Inc., along with its subsidiaries (collectively, “Heliogen” or the “Company”), is involved in the development and commercialization of next generation concentrated solar energy. We are developing a modular, artificial intelligence (“AI”)-enabled, concentrated solar energy thermal energy plant that will use an array of mirrors to reflect sunlight and capture, concentrate, store and convert it into cost-effective energy on demand. Unless otherwise indicated or the context requires otherwise, references in our consolidated financial statements to “we,” “our,” “us” and similar expressions refer to Heliogen.

***Basis of Presentation***

The accompanying financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America (“U.S. GAAP”) and in accordance with the rules and regulations of the Securities and Exchange Commission (“SEC”) and include the accounts of Heliogen and the subsidiaries it controls. All material intercompany balances are eliminated in consolidation. These condensed consolidated financial statements should be read in conjunction with the audited consolidated financial statements and notes thereto included in Heliogen’s Annual Report on Form 10-K/A for the year ended December 31, 2021 filed on May 23, 2022.

Certain information and disclosures normally included in annual financial statements have been condensed or omitted in these interim financial statements. In our opinion, the unaudited interim financial statements have been prepared on the same basis as the annual financial statements and include all adjustments, consisting of only normal recurring adjustments, necessary for fair statement. The results of operations for the nine months ended September 30, 2022, are not necessarily indicative of the results of operations to be expected for the full year ending December 31, 2022.

***Athena Business Combination***

On December 30, 2021 (the “Closing Date”), Heliogen, Inc., a Delaware corporation (“Legacy Heliogen”), Athena Technology Acquisition Corp., a Delaware corporation (“Athena”), and HelioMax Merger Sub, Inc. (“Merger Sub”), Athena’s direct, wholly-owned subsidiary, consummated the closing of transactions contemplated by the business combination agreement, dated July 6, 2021, by and among Athena, Merger Sub, and Legacy Heliogen (the “Business Combination”).

The Business Combination was accounted for as a reverse recapitalization in accordance with Accounting Standards Codification (“ASC”) 805, *Business Combinations*, pursuant to which Athena was treated as the “accounting acquiree” and Legacy Heliogen as the “accounting acquirer” for financial reporting purposes. Accordingly, for accounting purposes, the Business Combination was treated as Legacy Heliogen issuing equity for the net assets of Athena, followed by a recapitalization. The consolidated assets, liabilities, and results of operations of Legacy Heliogen comprise the historical consolidated financial statements of the post combination company, and Athena’s assets, liabilities and results of operations are consolidated with Legacy Heliogen beginning on the acquisition date. Accordingly, for accounting purposes, the condensed consolidated financial statements of the post combination company represent a continuation of the historical consolidated financial statements of Legacy Heliogen, and the net assets of Athena are stated at historical cost, with no goodwill or other intangible assets recorded.

In accordance with accounting guidance applicable to these circumstances, the equity structure has been recast in all comparative periods up to the Closing Date to reflect the number of shares of the Company’s common stock, \$0.0001 par value per share, issued to Legacy Heliogen’s stockholders in connection with the Business Combination. As such, the shares and corresponding capital amounts and earnings per share related to Legacy Heliogen redeemable convertible preferred stock, common stock, warrants, options, and restricted stock units (“RSU”) prior to the Business Combination have been retroactively recast as shares reflecting the exchange ratio of 2.013 established in the Business Combination.

**Heliogen, Inc.**  
**Notes to the Condensed Consolidated Financial Statements**  
**(Unaudited)**

**Use of Estimates**

The preparation of financial statements in conformity with U.S. GAAP requires us to make estimates and assumptions that affect the amounts reported in our consolidated financial statements and the accompanying notes. On an ongoing basis, we evaluate our estimates, including those related to inputs used to recognize revenue over time, accounting for income taxes, the fair values of share-based compensation, lease liabilities, warrant liabilities, and long-lived asset impairments. Despite our intention to establish accurate estimates and reasonable assumptions, actual results could differ materially from such estimates and assumptions.

**Reclassifications**

Certain immaterial prior period amounts have been reclassified to conform to current period presentation. Such changes did not have a material impact on our financial position or results of operation. All dollar amounts (other than per share amounts) in the following disclosures are in thousands of United States dollars, unless otherwise indicated.

**Recent Accounting Pronouncements**

In August 2020, the Financial Accounting Standards Board issued Accounting Standards Update (“ASU”) No. 2020-06, *Debt—Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging—Contracts in Entity’s Own Equity (Subtopic 815-40): Accounting for Convertible Instruments and Contracts in an Entity’s Own Equity* (“ASU 2020-06”). The amendments eliminate two of the three accounting models that require separate accounting for convertible features of debt securities, simplify the contract settlement assessment for equity classification, require the use of the if-converted method for all convertible instruments in the diluted earnings per share calculation and expand disclosure requirements. We adopted ASU 2020-06 on January 1, 2022 with no impact on our condensed consolidated financial statements.

**2. Revenue****Disaggregated Revenue**

We disaggregate revenue into the following revenue categories:

<i>\$ in thousands</i>	Three Months Ended September 30,		Nine Months Ended September 30,	
	2022	2021	2022	2021
Project revenue	\$ 1,324	\$ —	\$ 4,207	\$ —
Other services revenue	43	2,202	168	3,563
Total services revenue	1,367	2,202	4,375	3,563
Grant revenue	1,733	—	4,656	—
Total revenue	\$ 3,100	\$ 2,202	\$ 9,031	\$ 3,563

Project revenue consists of amounts recognized under contracts with customers for the development, construction and delivery of commercial-scale concentrated solar energy facilities. Other services revenue consists of amounts recognized under contracts with customers for the provision of engineering, research and development or other similar services in our field of expertise. Revenue recognized during 2022 and 2021 includes commercial, non-governmental customers in the United States and Europe.

Pursuant to the terms of the commercial-scale demonstration agreement (the “CSDA”) executed with Woodside Energy (USA) Inc. (“Woodside”) in March 2022, Heliogen will complete the engineering, procurement, and construction of a new 5 MWe concentrated solar energy facility to be built in Mojave, California (the “Facility”) for the customer’s use in testing, research and development. Pursuant to the CSDA, the customer will pay up to \$50 million to Heliogen to complete the Facility. The total transaction price for the CSDA is \$45.5 million reflecting a reduction in contract price for the fair value of the Project Warrants (defined and discussed further in Note 3) granted to the customer in connection with the CSDA. The CSDA modified and replaced a limited notice to proceed executed in October 2021. For the three and nine

**Heliogen, Inc.**  
**Notes to the Condensed Consolidated Financial Statements**  
**(Unaudited)**

months ended September 30, 2022, the CSDA contributed \$1.3 million and \$4.2 million, respectively, or 97% and 96%, respectively, to total services revenue.

During the three and nine months ended September 30, 2022, the Company recognized grant revenue under the Company's award from the U.S. Department of Energy's Solar Energy Technology Office (the "DOE Award") of \$1.7 million and \$4.7 million, respectively, related to costs incurred during such periods that are reimbursable under the DOE Award.

During the three and nine months ended September 30, 2021, the Company recognized \$2.2 million and \$3.6 million, respectively associated with several engineering and design contracts which was largely related to a predecessor contract to the CSDA.

**Provision for Contract Losses**

For the nine months ended September 30, 2022, we recognized a total provision for contract losses of \$3.7 million driven primarily by the CSDA, as estimated costs to satisfy performance obligations for the remainder of those contracts exceeded consideration to be received from the customers. The Company recognized total contract losses of \$32.9 million related to the CSDA reflecting the Company's estimate of the full expected loss on the design, engineering, and construction of the Facility given the consideration expected to be realized under the CSDA (net of the fair value of the Project Warrants) and the DOE Award.

We recognized no provisions for contract losses during the three months ended September 30, 2022 and the three and nine months ended September 30, 2021.

**Performance Obligations and Contract Liabilities**

Revenue recognized under contracts with customers relate solely to the performance obligations satisfied in 2022. On September 30, 2022, we had approximately \$1.3 million of the transaction price allocated to remaining performance obligations through 2025.

As of September 30, 2022 and December 31, 2021, our contract liabilities were \$8.5 million and \$0.5 million, respectively. Activity included in contract liabilities during the nine months ended September 30, 2022 consisted of additions for deferred revenue of \$12.9 million offset by revenue recognized of \$4.4 million, and other activity of \$0.5 million.

**Receivables**

<i>\$ in thousands</i>	September 30, 2022	December 31, 2021
Trade receivables		
Billed	\$ —	\$ 900
Unbilled	334	1,123
Total trade receivables	334	2,023
Grant receivables		
Billed	1,399	—
Unbilled	4,698	1,442
Total grant receivables	6,097	1,442
Other	154	431
Total receivables	\$ 6,585	\$ 3,896

**Heliogen, Inc.**  
**Notes to the Condensed Consolidated Financial Statements**  
**(Unaudited)**

### 3. Warrants

#### *Public Warrants and Private Warrants*

The Company's warrant liability as of September 30, 2022 includes public warrants (the "Public Warrants") and private placement warrants (the "Private Warrants"). The Public Warrants and Private Warrants permit warrant holders to purchase in the aggregate 8,333,333 shares and 233,333 shares, respectively, of the Company's common stock at an exercise price of \$11.50 per share. The Public Warrants and the Private Warrants became exercisable on March 16, 2022 and expire on December 30, 2026, or earlier upon redemption or liquidation. The Company has the ability to redeem outstanding Public Warrants prior to their expiration, at a price of \$0.01 per warrant, provided that the last reported sales price of the Company's common stock equals or exceeds \$18.00 per share for any 20 trading days within a 30 trading-day period ending on the third trading day prior to the notice date of redemption. In addition, the Company has the ability to redeem all (but not less than all) of the outstanding Public Warrants and Private Warrants prior to their expiration, at a price of \$0.10 per warrant if the last reported sales price of the Company's common stock equals or exceeds \$10.00 on the trading day prior to the date of the notice. The Company evaluated the Public Warrants and Private Warrants and concluded that a provision in the underlying warrant agreement dated March 16, 2022, by and between Athena and Continental Stock Transfer & Trust Company, related to certain tender or exchange offers precludes both the Public Warrants and Private Warrants from being accounted for as components of equity. As both the Public Warrants and Private Warrants meet the definition of a derivative, they are recorded on the condensed consolidated balance sheets as liabilities and measured at fair value at each reporting date, with the change in fair value reported in gain (loss) on warrant remeasurement on the condensed consolidated statements of operations and comprehensive loss.

#### *Project Warrants*

In connection with the concurrent execution of the CSDA with Woodside in March 2022, the Company issued warrants permitting Woodside to purchase approximately 0.91 million shares of the Company's common stock at an exercise price of \$0.01 per share (the "Project Warrants"). These warrants expire upon the earlier of a change in control of the Company or March 28, 2027 and vest pro rata with certain payments required to be made by the customer under the CSDA. The fair value of the Project Warrants upon issuance was \$4.96 per warrant based on the closing price of the Company's shares on March 28, 2022 less the exercise price.

The Project Warrants were determined to be consideration payable to a customer or non-employee and are equity-classified pursuant to the guidance in ASC 718, *Stock Compensation* ("ASC 718"). For the Project Warrants, the total consideration payable to the customer of approximately \$4.5 million reduced the transaction price associated with the customer's contract and the Company recognized \$0.2 million as an increase to additional paid-in-capital related to the Project Warrants to reflect the attribution of the Project Warrants' fair value in a manner similar to revenue recognized under the customer's contract. As of September 30, 2022, none of the Project Warrants have vested or become exercisable.

#### *Collaboration Warrants*

In connection with the concurrent execution of a collaboration agreement (the "Collaboration Agreement") with Woodside in March 2022, the Company issued warrants permitting Woodside to purchase approximately 3.65 million shares of the Company's common stock at an exercise price of \$0.01 per share (the "Collaboration Warrants"). These warrants expire upon the earlier of a change in control of the Company or March 28, 2027. Of these warrants, (i) 1.825 million warrants vested immediately upon execution of the Collaboration Agreement and (ii) 1.825 million warrants will vest based on certain specified performance goals under the Collaboration Agreement relating to towers contracted. The fair value of the Collaboration Warrants upon issuance was \$4.96 per warrant based on the closing price of the Company's shares on March 28, 2022 less the exercise price.

The Collaboration Warrants were determined to be consideration payable to a customer or non-employee and are equity-classified under ASC 718. For the Collaboration Warrants, the Company recognized a prepaid expense of \$9.1 million, of which \$2.6 million was classified as current and \$6.5 million was classified as long-term, with a corresponding increase to additional paid-in-capital related to the Collaboration Warrants that immediately vested. This amount will be recognized ratably as selling, general and administrative ("SG&A") expense beginning April 2022 for marketing services to be provided over the estimated service period. As of September 30, 2022, the remaining estimated

**Heliogen, Inc.**  
**Notes to the Condensed Consolidated Financial Statements**  
**(Unaudited)**

period is approximately four years. For the three and nine months ended September 30, 2022, we recognized approximately \$0.6 million and \$1.3 million as SG&A expense related to the vesting of the Collaboration Warrants. Additional vesting of the Collaboration Warrants will be recognized as deferred contract acquisition costs upon execution of an applicable customer contract as defined in the Collaboration Agreement and will be amortized to expense over the term of the applicable customer contract.

**Vendor Warrants**

On April 19, 2022, the Company issued warrants to purchase 76,923 shares of the Company's common stock, at an exercise price of \$0.01 per share ("Vendor Warrants"), to a vendor as compensation for services to be performed by the vendor. The Vendor Warrants vest in 12 equal installments monthly, subject to continued service by the vendor, and are completely vested upon the one-year anniversary of issuance. The Vendor Warrants were determined to be consideration payable to a customer or non-employee and are equity-classified under ASC 718. The Vendor Warrants had a fair value upon issuance of \$ 0.3 million, which will be recognized ratably over one year as SG&A expense. For the three and nine months ended September 30, 2022, the Company recognized approximately \$0.1 million and \$0.1 million, respectively, as SG&A expense related to the portion of the Vendor Warrants that vested during the period. The fair value of the Vendor Warrants upon issuance was \$ 4.18 per warrant based on the closing price of the Company's shares on April 19, 2022 less the exercise price.

**4. Acquisition**

In September 2021, Heliogen acquired 100% of the equity interests of HelioHeat GmbH ("HelioHeat"), a private limited liability company in Germany engaged in the development, planning and construction of renewable energy systems and components, including a novel solar receiver (the "HelioHeat Acquisition").

The components of the fair value of consideration transferred are as follows (\$ in thousands):

Cash paid at closing	\$	1,714
Contingent consideration <sup>(1)</sup>		2,009
Settlement of pre-existing relationship		45
Total fair value of consideration transferred	\$	<u>3,768</u>

(1) See Note 11— Fair Value of Financial Instruments for additional information.

**Heliogen, Inc.**  
**Notes to the Condensed Consolidated Financial Statements**  
**(Unaudited)**

The purchase price allocation for the HelioHeat Acquisition was finalized as of March 31, 2022. The following table summarizes the purchase price allocation as of the acquisition date and the adjustments recorded during the measurement period.

<i>\$ in thousands</i>	<b>As of</b>		<b>Final Valuation</b>
	<b>December 31, 2021</b>		
	<b>Preliminary Valuation</b>	<b>Measurement Period Adjustments</b>	
Cash and cash equivalents	\$ 30	\$ —	\$ 30
Prepaid and other current assets	33	—	33
Property, plant and equipment, net	6	—	6
Intangible asset	—	4,204	4,204
Goodwill	4,204	(3,093)	1,111
Total assets acquired	4,273	1,111	5,384
Accrued expenses and other current liabilities	74	—	74
Contract liabilities	390	—	390
Debt	41	—	41
Deferred tax liabilities	—	1,111	1,111
Total liabilities assumed	505	1,111	1,616
Net assets acquired	\$ 3,768	\$ —	\$ 3,768

The Company recorded measurement period adjustments based on the valuation of the intangible asset related to developed technology associated with HelioHeat’s solar receiver technology and the related deferred tax impact. The purchase price allocation resulted in the recognition of \$1.1 million in goodwill, which includes measurement period adjustments, of which none is expected to be tax deductible. Goodwill represents the value expected to be received from the synergies of integrating HelioHeat’s operations with Heliogen’s operations to expand commercial opportunities and the assembled workforce in place.

The fair value of the intangible asset was estimated using the replacement cost approach, which was based on Level 3 inputs, which is defined in Note 11—Fair Value of Financial Instruments. Significant valuation assumptions include management’s estimated costs to reproduce HelioHeat solar receiver technology if the Company had developed the technology using its own resources, developer’s profit margin based on estimated market participants’ required margin, and an estimated discount for economic obsolescence. The intangible asset will be amortized over its estimated useful life of five years through June 2026.

**5. Income Taxes**

We calculate our quarterly tax provision pursuant to the guidelines in ASC 740, *Income Taxes*. ASC 740 requires companies to estimate the annual effective tax rate for current year ordinary income. The relationship between our income tax provision or benefit and our pre-tax book income or loss can vary significantly from period to period considering, among other factors, the overall level of pre-tax book income or loss and changes in the blend of jurisdictional income or loss that is taxed at different rates and changes in valuation allowances. The income tax benefit of \$46 thousand and \$0.8 million for the three and nine months ended September 30, 2022, respectively, was primarily attributable to our HelioHeat operations. We incurred no income tax benefit or provision for the three and nine months ended September 30, 2021. Any income tax benefit associated with the pre-tax loss for the three and nine months ended September 30, 2022, resulting primarily from the U.S. jurisdiction, is offset by a full valuation allowance.

In assessing the realizability of deferred tax assets, we consider whether it is more likely than not that some portion or all of the deferred tax assets will not be realized. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income during the periods in which those temporary differences become deductible. Based upon the analysis of federal and state deferred tax balances, future tax projections and availability of taxable income in the

**Heliogen, Inc.**  
**Notes to the Condensed Consolidated Financial Statements**  
**(Unaudited)**

carryback period, we recorded a full valuation allowance against the federal and state deferred tax assets as of September 30, 2022 and December 31, 2021.

The Company is subject to the provisions of ASC Subtopic 740-10, *Accounting for Uncertainty in Income Taxes*. This standard defines the threshold for recognizing the benefits of tax return positions in the financial statements as more-likely-than-not to be sustained by the relevant taxing authority and requires measurement of a tax position meeting the more-likely-than-not criterion, based on the largest benefit that is more than 50% likely to be realized. If upon performance of an assessment pursuant to this subtopic, management determines that uncertainties in tax positions exist that do not meet the minimum threshold for recognition of the related tax benefit, a liability is recorded in the condensed consolidated financial statements. The Company recognizes interest and penalties, if any, related to unrecognized tax benefits as a component of income tax expense. We do not have material unrecognized tax benefits for uncertain tax positions.

## 6. Share-Based Compensation

The Heliogen, Inc. 2021 Equity Incentive Plan aims to incentivize employees, directors and consultants who render services to the Company through the granting of stock awards, including options, stock appreciation right (“SARs”) awards, restricted stock awards, RSU awards, performance awards, and other stock-based awards.

During the three and nine months ended September 30, 2022, we granted 6,207,165 and 8,317,780 RSU awards, respectively, at a weighted average grant date fair value per share of \$2.34 and \$2.83, respectively.

Our total share-based compensation expense, including the affected line on the condensed consolidated statements of operations and comprehensive loss, is as follows:

<i>\$ in thousands</i>	Three Months Ended September 30,		Nine Months Ended September 30,	
	2022	2021	2022	2021
Cost of services revenue (excluding depreciation and amortization)	\$ 330	\$ —	\$ 1,321	\$ —
Selling, general and administrative	7,562	1,346	28,696	1,729
Research and development	2,080	139	4,461	320
Total share-based compensation expense	<u>\$ 9,972</u>	<u>\$ 1,485</u>	<u>\$ 34,478</u>	<u>\$ 2,049</u>

**Heliogen, Inc.**  
**Notes to the Condensed Consolidated Financial Statements**  
**(Unaudited)**

**7. Loss Per Share**

Basic and diluted losses per share were as follows:

<i>\$ in thousands, except per share and share data</i>	<b>Three Months Ended September 30,</b>		<b>Nine Months Ended September 30,</b>	
	<b>2022</b>	<b>2021</b>	<b>2022</b>	<b>2021</b>
<b>Numerator</b>				
Net loss	\$ (27,829)	\$ (28,276)	\$ (107,014)	\$ (88,665)
<b>Denominator</b>				
Weighted-average common shares outstanding	190,526,219	11,545,919	187,633,327	10,650,897
Weighted-average impact of warrants <sup>(1)</sup>	2,053,906	—	1,194,443	—
Denominator for basic EPS – weighted-average shares	192,580,125	11,545,919	188,827,770	10,650,897
<b>Effect of dilutive securities</b>				
Denominator for diluted EPS – weighted-average shares	192,580,125	11,545,919	188,827,770	10,650,897
<b>Loss per share – Basic</b>	<b>\$ (0.14)</b>	<b>\$ (2.45)</b>	<b>\$ (0.57)</b>	<b>\$ (8.32)</b>
<b>Loss per share – Diluted</b>	<b>\$ (0.14)</b>	<b>\$ (2.45)</b>	<b>\$ (0.57)</b>	<b>\$ (8.32)</b>

(1) Warrants that have a \$0.01 exercise price are assumed to be exercised when vested because common shares issued for little consideration upon exercise are included in outstanding shares for the purposes of computing basic and diluted EPS.

The following securities were excluded from the calculation of Loss per share as their impact would be anti-dilutive:

	<b>Three Months Ended September 30,</b>		<b>Nine Months Ended September 30,</b>	
	<b>2022</b>	<b>2021</b>	<b>2022</b>	<b>2021</b>
Stock options	32,999,878	31,492,075	32,999,878	31,492,075
Unvested restricted stock units	11,479,099	—	11,479,099	—
Restricted shares issued upon the early exercise of unvested options	135,271	1,338,710	135,271	1,338,710
Unvested warrants	2,497,171	—	2,497,171	—
Vested warrants	8,566,656	229,841	8,566,656	229,841
Preferred stock warrants, on an “as converted” basis	—	381,306	—	381,306
Convertible preferred shares, on an “as converted” basis <sup>(1)</sup>	—	121,040,751	—	121,040,751

(1) For the three and nine months ended September 30, 2021, there were 117,886,982 convertible preferred shares outstanding.

**8. Related Party Transactions**

***Idealab***

The Chief Executive Officer of our Company also serves as the chairman of the board of directors of Idealab, a California Corporation (“Idealab”). Idealab, a minority owner of Heliogen’s outstanding voting stock through its wholly-owned subsidiary, Idealab Holdings, LLC, is a party to a lease with the Company and provides various services through service agreements which include accounting, human resources, legal, information technology, marketing, public relations, and certain other operational support and executive advisory services. Since the closing of the Business Combination on December 30, 2021, as discussed in Note 1, the reliance on Idealab for these services has reduced significantly as the

**Heliogen, Inc.**  
**Notes to the Condensed Consolidated Financial Statements**  
**(Unaudited)**

Company increased headcount related to administrative functions. All expenses or amounts paid to Idealab pursuant to these agreements are reported within SG&A expense in the condensed consolidated statements of operations and comprehensive loss.

The amounts charged to us or reimbursed by us under these agreements were as follows:

<i>\$ in thousands</i>	Three Months Ended September 30,		Nine Months Ended September 30,	
	2022	2021	2022	2021
Administrative services provided by Idealab	\$ 133	\$ 314	\$ 436	\$ 1,066

In May 2021, Heliogen sub-leased a portion of its office space in Pasadena, CA to Idealab for a term of seven years. The sub-lease has an initial annual base rent of approximately \$150 thousand and contains a 3% per annum escalation clause. The sub-lease is subject to termination by either party upon six months prior written notice. Concurrently with the parties' entering into the sub-lease agreement, Idealab and Heliogen also entered into certain property management and shared facilities staffing agreements, which provide that Heliogen pays Idealab approximately \$3 thousand per month for building management services and approximately \$13 thousand per month for shared facilities staff and services (with proportional reimbursement of salaries). Such agreements are subject to termination right by either party with 90 days prior written notice.

The Company recognized rental revenue from Idealab within other income, net in our condensed consolidated statements of operations and comprehensive loss as follows:

<i>\$ in thousands</i>	Three Months Ended September 30,		Nine Months Ended September 30,	
	2022	2021	2022	2021
Rental revenue	\$ 35	\$ 314	\$ 82	\$ 1,066

**9. Commitments and Contingencies**

We are involved in various claims and lawsuits arising in the normal course of business, including proceedings involving tort and other general liability claims, and other miscellaneous claims. We recognize a liability when we believe the loss is probable and reasonably estimable. We currently believe that the ultimate outcome of such lawsuits and proceedings will not, individually or in the aggregate, have a material effect on our condensed consolidated financial statements as of and for the nine months ended September 30, 2022.

Although we cannot predict the outcome of legal or other proceedings with certainty, when it is probable that a loss has been incurred and the amount is reasonably estimable, U.S. GAAP requires us to accrue an estimate of the probable loss or range of loss or make a statement that such an estimate cannot be made. We follow a thorough process in which we seek to estimate the reasonably possible loss or range of loss, and only if we are unable to make such an estimate do we conclude and disclose that an estimate cannot be made. Accordingly, unless otherwise indicated below in our discussion of legal proceedings, a reasonably possible loss or range of loss associated with any individual legal proceeding cannot be estimated.

On August 30, 2021, the Company's predecessor, Athena, received a litigation demand letter (the "Class Vote Demand") on behalf of Athena's stockholder FWD LKNG GDD Irrevocable Trust. The Class Vote Demand alleged that Athena violated Section 242(b)(2) of the Delaware General Corporation Law (the "DGCL") by not requiring separate class votes for holders of the Athena Class A and Class B Common Stock in connection with certain aspects of the business combination between Athena and Heliogen. According to the Class Vote Demand, a class vote was required under Section 242(b)(2) because consideration to the stockholders of Heliogen was to be paid in newly issued common stock, following elimination of the Class B Common Stock. While such separate class vote is not required pursuant to Section 242(b)(2) of the DGCL, Athena concluded that such separate class vote was advisable to prevent disruption to the proposed transaction with Heliogen, and to avoid the delay and expense of potential litigation and amended its Form S-4 Registration Statement to reflect that change. On January 20, 2022, the stockholders' counsel asserted entitlement to an award of attorneys' fees to

**Heliogen, Inc.**  
**Notes to the Condensed Consolidated Financial Statements**  
**(Unaudited)**

reflect the benefit it purportedly obtained for all Athena stockholders. This matter was resolved in March 2022 with final settlement paid in April 2022 and no material impact to our financial condition or results of operations.

**10. Accumulated Other Comprehensive Loss**

Changes in Accumulated Other Comprehensive Loss (“AOCL”), net of tax, by component were as follows:

<i>\$ in thousands</i>	Changes in fair value of investment securities	Accumulated foreign currency translation adjustments	Total
Balance at June 30, 2022	\$ (523)	\$ (311)	\$ (834)
Other comprehensive loss adjustments before reclassifications	(18)	(173)	(191)
Amounts reclassified from AOCL	—	—	—
Net other comprehensive loss	(18)	(173)	(191)
Balance at September 30, 2022	<u>\$ (541)</u>	<u>\$ (484)</u>	<u>\$ (1,025)</u>
Balance at December 31, 2021	\$ (17)	\$ 13	\$ (4)
Other comprehensive loss adjustments before reclassifications	(681)	(497)	(1,178)
Amounts reclassified from AOCL	157	—	157
Net other comprehensive loss	(524)	(497)	(1,021)
Balance at September 30, 2022	<u>\$ (541)</u>	<u>\$ (484)</u>	<u>\$ (1,025)</u>

<i>\$ in thousands</i>	Changes in fair value of investment securities	Accumulated foreign currency translation adjustments	Total
Balance at June 30, 2021	\$ (14)	\$ —	\$ (14)
Other comprehensive loss adjustments before reclassifications	7	(57)	(50)
Amounts reclassified from AOCL	—	—	—
Net other comprehensive loss	7	(57)	(50)
Balance at September 30, 2021	<u>\$ (7)</u>	<u>\$ (57)</u>	<u>\$ (64)</u>
Balance at December 31, 2020	\$ —	\$ —	\$ —
Other comprehensive loss adjustments before reclassifications	(7)	(57)	(64)
Amounts reclassified from AOCL	—	—	—
Net other comprehensive loss	(7)	(57)	(64)
Balance at September 30, 2021	<u>\$ (7)</u>	<u>\$ (57)</u>	<u>\$ (64)</u>

There were no tax impacts related to the Company’s other comprehensive loss items at September 30, 2022 and December 31, 2021.

**Heliogen, Inc.**  
**Notes to the Condensed Consolidated Financial Statements**  
**(Unaudited)**

Reclassifications out of AOCL, net of tax, by component were as follows:

<i>\$ in thousands</i>	<b>Three Months Ended September 30,</b>		<b>Nine Months Ended September 30,</b>		<b>Affected line item on the Condensed Consolidated Statements of Operations</b>
	<b>2022</b>	<b>2021</b>	<b>2022</b>	<b>2021</b>	
<b>Changes in fair value on investment securities</b>					
Reclassification of realized losses	\$ —	\$ —	\$ 157	\$ —	Other (expense) income, net
Tax benefit (provision)	—	—	—	—	Benefit for income taxes
Net changes in fair value on investment securities	<u>\$ —</u>	<u>\$ —</u>	<u>\$ 157</u>	<u>\$ —</u>	

**11. Fair Value of Financial Instruments**

Fair value is defined as the amount that would be received for selling an asset or paid to transfer a liability in an orderly transaction between market participants and is generally classified in one of the following categories:

Level 1 — Fair value is based on quoted prices for identical instruments in active markets.

Level 2 — Fair value is based on quoted prices for similar instruments in active markets; quoted prices for identical or similar instruments in markets that are not active; and model-derived valuations in which all significant inputs and significant value drivers are observable in active markets.

Level 3 — Fair value is based on valuations derived from valuation techniques in which one or more significant inputs or significant value drivers are unobservable.

The Company's assets and liabilities measured at fair value on a recurring basis are summarized in the following table by fair value measurement level:

<i>\$ in thousands</i>	<b>Level</b>	<b>September 30, 2022</b>	<b>December 31, 2021</b>
<b>Assets:</b>			
Investments	1	\$ 128,803	\$ 32,332
<b>Liabilities:</b>			
Public Warrants	1	\$ 1,834	\$ 14,167
Private Warrants	2	\$ 51	\$ 396
Contingent consideration <sup>(1)</sup>	3	\$ 946	\$ 2,009

(1) Included in other long-term liabilities on the condensed consolidated balance sheet.

**Heliogen, Inc.**  
**Notes to the Condensed Consolidated Financial Statements**  
**(Unaudited)**

The following table summarizes the reconciliation of our Level 3 fair value measurements:

<i>(\$ in thousands)</i>	SAFE Instruments <sup>(3)</sup>	Legacy Heliogen Preferred Stock Warrants <sup>(3)</sup>	Contingent Consideration <sup>(2)</sup>
<b>Three Months Ended September 30, 2022</b>			
Beginning of period	\$ —	\$ —	\$ 2,062
Net realized decrease in fair value	—	—	(1,116)
End of period	<u>\$ —</u>	<u>\$ —</u>	<u>\$ 946</u>
<b>Nine Months Ended September 30, 2022</b>			
Beginning of period	\$ —	\$ —	\$ 2,009
Net realized decrease in fair value	—	—	(1,063)
End of period	<u>\$ —</u>	<u>\$ —</u>	<u>\$ 946</u>
<b>Three Months Ended September 30, 2021</b>			
Beginning of period	\$ 130,871	\$ 2,329	\$ —
Net realized increase in fair value	15,533	321	—
Acquisition	—	—	2,009
End of period	<u>\$ 146,404</u>	<u>\$ 2,650</u>	<u>\$ 2,009</u>
<b>Nine Months Ended September 30, 2021</b>			
Beginning of period	\$ —	\$ 46	\$ —
Net realized increase in fair value	62,993	2,604	—
Issuances <sup>(1)</sup>	83,411	—	—
Acquisition	—	—	2,009
End of period	<u>\$ 146,404</u>	<u>\$ 2,650</u>	<u>\$ 2,009</u>

(1) Net of issuance costs.

(2) The changes in the fair value of the contingent consideration are reported in our Condensed Consolidated Statements of Operations and Comprehensive Loss in other income (expense), net.

(3) On December 30, 2021, immediately prior to the Business Combination, the SAFE Instruments and preferred stock warrants were converted into common stock.

The contingent consideration was measured at fair value using a probability-weighted cash-flow method. The key inputs used in the valuation for the contingent consideration as of September 30, 2022 included the timing and probability of payment.

The SAFE Instruments and Legacy Heliogen preferred stock warrants were measured at fair value using a probability-weighted method considering two potential outcomes: a Special Purpose Acquisition Company (“SPAC”) exit

**Heliogen, Inc.**  
**Notes to the Condensed Consolidated Financial Statements**  
**(Unaudited)**

scenario and a stay private scenario. The table below summarizes key inputs used in the valuation for the SAFE Instruments and warrants as of September 30, 2021:

	SPAC Scenario	Private Scenario	
		Safe Instruments	Warrants
Scenario probability weighting	85 %	15 %	15 %
Expected term (in years)	0.6	2.1	2.1
Expected volatility	55.0 %	20.0 %	102.5 %
Risk-free interest rate	0.1 %	0.3 %	0.3 %
Dividend yield	—	—	—

**12. Investments**

Investments in fixed maturity securities as of September 30, 2022 and December 31, 2021 are classified as available-for-sale and are summarized in the following table below:

<i>\$ in thousands</i>	September 30, 2022			December 31, 2021		
	Amortized Cost	Unrealized Losses	Fair Value	Amortized Cost	Unrealized Losses	Fair Value
<b>Short-term investments</b>						
Corporate bonds	\$ 10,508	\$ (83)	\$ 10,425	\$ 32,349	\$ (17)	\$ 32,332
Commercial paper	17,493	(33)	17,460	—	—	—
U.S. treasury bills	96,460	(311)	96,149	—	—	—
Total short-term investments	124,461	(427)	124,034	32,349	(17)	32,332
<b>Long-term investments</b>						
U.S. treasury bills	4,883	(114)	4,769	—	—	—
Total long-term investments	4,883	(114)	4,769	—	—	—
<b>Total</b>	<b>\$ 129,344</b>	<b>\$ (541)</b>	<b>\$ 128,803</b>	<b>\$ 32,349</b>	<b>\$ (17)</b>	<b>\$ 32,332</b>

There were no credit losses recognized for the three and nine months ended September 30, 2022 and 2021, and there was no allowance for credit losses as of September 30, 2022 and December 31, 2021.

We incurred no realized losses on the sale of investments during the three months ended September 30, 2022. We incurred realized losses of approximately \$0.2 million on the sale of investments during the nine months ended September 30, 2022. There were no realized gains or losses on investments during the three and nine months ended September 30, 2021.

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

*The following management's discussion and analysis ("MD&A") provides information that management believes is relevant to an assessment and understanding of our consolidated results of operations and financial condition, and includes forward-looking statements that involve risks, uncertainties and assumptions. The MD&A should be read in conjunction with our condensed consolidated financial statements and related notes included in Part I Item 1 in this Quarterly Report on Form 10-Q, and the section titled "Cautionary Note Regarding Forward-Looking Statements" included in the forepart in this Quarterly Report on Form 10-Q.*

### Overview

Heliogen is a leader in next generation concentrated solar energy technology. We are developing a modular, artificial intelligence ("AI")-enabled, concentrated solar energy plant that will use an array of mirrors to reflect sunlight and capture, concentrate, store and convert it into cost-effective energy on demand. Our unique system will have the ability to cost-effectively generate and store thermal energy at very high temperatures. The ability to produce high-temperature heat, and the inclusion of thermal energy storage, distinguishes our solution from clean energy provided by typical photovoltaic ("PV") and wind installations which do not produce thermal energy and are only able to produce energy intermittently unless battery storage is added. The system will be configurable for several applications, including the carbon-free generation of clean power (electricity), industrial-grade heat (for use in industrial processes), and green hydrogen, based on a customer's needs.

We have developed innovations in the process of concentrating sunlight which we believe fundamentally improve the potential to efficiently and cost effectively collect and deliver energy to industrial processes. We believe we will be one of the first technology providers with the ability to deliver cost-effective renewable energy capable of replacing fossil fuels used in industrial processes that require high temperature heat and/or nearly 24/7 operation. In addition, we believe our disruptive, patented design and A.I. technology will address a fundamental problem confronted by many renewable sources of energy: intermittency. An intermittent power supply does not match the continuous power demand of industry and the grid. Without storage, wind and PV-based renewable energy generation may rapidly fluctuate between over-supply and under-supply based on resource availability. As the grid penetration of intermittent resources increases, these fluctuations may become increasingly extreme. We believe our technology will contribute to solving this problem. Our solar plants will have the ability to store very high temperature energy in solid media. This energy will then be dispatchable, including during times without sunlight, to cost-effectively deliver near 24/7 carbon-free energy in the form of heat, electric power or green hydrogen fuel.

The three use categories for the backbone of three business lines will be configured as follows:

**HelioHeat** — The production of heat or steam for use in industrial processes will be enabled by the baseline system.

**HelioPower** — With the baseline system as the foundation, the addition of a turbine generator system will then enable power generation.

**HelioFuel** — Building on the Power system described above, hydrogen fuel production will be enabled by further adding an electrolyzer system to the baseline system.

Our technological innovations will enable the delivery of our HelioHeat, HelioPower and HelioFuel solutions to customers. HelioHeat plants will produce carbon-free heat (e.g., process steam or hot air) to support industrial processes. HelioPower plants will deliver solar thermal energy to a heat engine to produce electrical power. HelioFuel plants will couple a HelioPower plant with an electrolyzer to produce green Hydrogen fuel. All three solutions will be enabled by Heliogen's proprietary heliostat design and AI technology, and will integrate thermal energy storage to enable operation nearly 24/7, overcoming the intermittency of other solar energy technologies.

For each of the three above solutions, we are offering multiple support models to customers looking to deploy Heliogen's technology:

- Contracting with owner-operators to build turnkey facilities that deploy Heliogen's technology (Heliogen will contract with engineering, procurement and construction ("EPC") partners for constructing the facility);
- Selling heliostats (and associated software control systems) to owner-operators and/or EPC contractors;
- Providing asset maintenance support services during operation, for completed facilities that use Heliogen's technology; and

- Providing project development support services to help customers advance readiness to break ground in advance of final investment decisions.

In the future, we will also be prepared to offer Heliogen's intellectual property through a licensing model to third parties interested in manufacturing and installing the hardware or may enter into long-term power or steam purchase agreements with customers and sell the project to third parties.

## **Recent Developments**

### *Memorandum of Understanding for Green Hydrogen Generation Facility*

On November 7, 2022, Heliogen announced it entered into a non-binding memorandum of understanding ("MOU") with the City of Lancaster, California to deploy Heliogen's technology for a green hydrogen production facility. The facility is expected to generate up to 1500 metric tons per year of carbon-free hydrogen, which can be sold to industrial customers in Lancaster and the greater Los Angeles area. This relationship is expected to accelerate the novel use of concentrating solar thermal energy for a commercial hydrogen generation facility. The MOU is subject to negotiation and of execution of a definitive agreement.

### *U.S. Department of Energy Award*

On September 27, 2022, Heliogen was selected to receive a \$4.1 million award from the U.S. Department of Energy Solar Energy Technologies Office to accelerate the large-scale development and deployment of concentrated solar-thermal power (CSP) technology for industrial decarbonization and electrical power generation and storage. This project will aim to demonstrate a first-of-its-kind CSP process for decarbonizing the heating of limestone to 950°C, which could reduce the carbon emissions associated with cement manufacturing.

### *Letter of Intent with a Sustainable Fuels Company*

On August 8, 2022, Heliogen announced it had entered into a non-binding letter of intent ("LOI") with a sustainable fuels company ("SFC") to jointly produce sustainable aviation fuel ("SAF") at Heliogen's concentrated solar thermal demonstration facility in Lancaster, California. This first-of-its-kind collaboration aims to synthesize sustainable jet fuel from sunlight and air to enable the rapid decarbonization of the aviation industry.

The companies will work to deploy Heliogen's proprietary, AI-powered HeliHeat™ technology to convert sunlight directly into thermal energy in the form of high temperature steam and air that will be used to produce green hydrogen for SFC's Reactor platform. The hydrogen will be produced leveraging the previously announced successful demonstration of Heliogen's concentrated solar technology. As part of the collaboration between Heliogen and SFC, the LOI includes a goal of building a fully integrated ~1 barrel per day drop-in ready SAF demonstration. The parties expect a demonstration project to be a first step to develop a pipeline for approximately 3 million barrels of fuel over the next ten years. The LOI is subject to negotiation and execution of a definitive agreement and we cannot provide any assurances that we will be able to do so.

### *Brenda Solar Energy Zone*

In December 2021, the U.S. Bureau of Land Management (the "BLM") awarded the Company the exclusive right to lease land in the Brenda Solar Energy Zone (the "Brenda SEZ"). Heliogen intends to develop a green hydrogen facility on the Brenda site, capable of producing approximately 20,000 metric tons of hydrogen per year. The Brenda SEZ is an ideal location for commercial-scale green hydrogen production due to the ample local water supply and its close proximity to potential offtake partners and key distribution channels.

In April 2022, the Company's wholly-owned subsidiary, Heliogen SR2, LLC, executed a right-of-way lease agreement with the BLM for 3,343 acres within the Brenda SEZ. As of June 30, 2022, the right-of-way lease had not commenced. In October 2022, the lease payments were finalized.

### *Installation of Fourth Generation Heliostats*

In July 2022, Heliogen completed the installation of its new fourth generation heliostats at its demonstration facility in Lancaster, California. As with the previous generations of our heliostats, each successive iteration is designed to be less expensive and more efficient to manufacture, install and maintain, while also improving performance and reliability of the solar field. These heliostats were produced on our pilot lines as part of the manufacturing validation process. We also installed them in Lancaster using the same installation methods and equipment that we plan to use for our first commercial-scale HeliHeat facility.

### *Autonomous Cleaning Functionality Testing*

In September 2022, Heliogen completed its latest round of testing on its ChariotAV autonomous cleaning vehicle, which validated the design of the vehicle and proved its ability to navigate the heliostat field autonomously while effectively cleaning the mirrors. Heliogen is confident in the vehicle's ability to accurately and repeatedly clean the mirrors to maintain optimal light reflectivity.

## **Key Factors and Trends Affecting our Business**

### *Inflation Reduction Act*

The Inflation Reduction Act of 2022 ("IRA") was signed into law on August 16, 2022. The IRA contains many provisions intended to incentivize domestic clean energy investment, clean energy production and manufacturing of necessary components, specifically: (a) the extension and enhancement of the Investment Tax Credit ("ITC") program, which the IRA extends to thermal energy storage equipment; (b) the addition of Production Tax Credits ("PTC") of \$3.00 per kilogram for clean hydrogen and a three-year extension and modification of PTCs for facilities that begin construction before December 31, 2024; (c) the creation of the Advanced Manufacturing Production Credit that applies to the solar components we plan to manufacture at our facility in Long Beach, California; (d) the creation of a new tax credit for sustainable aviation fuel up to \$1.75 per gallon, depending on the lifecycle carbon emissions reduction of the fuel; and (e) the increase in total funds available for the U.S. Department of Energy's Title 17 loan guarantee program by \$3.6 billion, bringing the total to \$40 billion. The ITC and PTC amount can be increased if certain domestic content requirements are satisfied or if a project is located in (i) an "energy community" or (ii) low-income community, each as defined in the IRA. Heliogen is continuing to evaluate the IRA to understand the full impact of these provisions and additional potential benefits and believes many of these provisions will drive increased demand for its renewable energy technology and related products while helping the United States to reduce its carbon footprint more rapidly.

### *Global Events including the COVID-19 Pandemic*

Our operations have been and may in the future be impacted by several global events including changes to existing geopolitical dynamics such as Russia's invasion of Ukraine, social and economic instability, and the impact of the COVID-19 pandemic, which have resulted in increased market volatility, changes to the labor market, inflation, which has resulted in increased commodity prices, and supply chain constraints. Recently, we have seen a recovery in shipping costs and lower commodity prices, however, the future remains uncertain. The ultimate extent the impact these global events and economic conditions will have on our businesses, operating results, cash flows, liquidity and financial condition will be driven primarily by the severity and duration of the direct impact on products in our supply chain and the broad impact to the U.S. and global economies.

## **Results of Operations**

### *Key Components of Our Results of Operations*

**Revenue** - For our contracts with customers, we recognize revenue over time using the incurred costs method for projects under development and engineering and design services. For government grants, we recognize grant revenue based on the amounts determined to be reimbursable for costs, including permitted indirect costs, incurred during a given period for which we have reasonable assurance of the funds being received under the grant.

**Cost of Sales** - Cost of sales consists primarily of direct labor and direct external vendor costs related to our revenue contracts. No allocation of depreciation and amortization has been recognized due to the nature of work being performed.

**Selling, General and Administrative Expense** - Selling, general and administrative ("SG&A") expense consists primarily of salaries, share-based compensation, and other personnel-related costs, professional fees, insurance costs, and other business development and selling expenses.

**Research and Development Expense** - Research and development ("R&D") expense consists primarily of salaries, share-based compensation and other personnel-related costs; the cost of products, materials, and outside services used in our R&D activities.

*Comparison of the Three and Nine Months Ended September 30, 2022 and 2021*

<i>\$ in thousands</i>	Three Months Ended September 30,			Nine Months Ended September 30,		
	2022	2021	\$ Change	2022	2021	\$ Change
<b>Revenue:</b>						
Services revenue	\$ 1,367	\$ 2,202	\$ (835)	\$ 4,375	\$ 3,563	\$ 812
Grant revenue	1,733	—	1,733	4,656	—	4,656
Total revenue	3,100	2,202	898	9,031	3,563	5,468
<b>Cost of revenue:</b>						
Cost of services revenue (excluding depreciation and amortization)	1,690	1,375	315	5,668	2,736	2,932
Cost of grant revenue	1,733	—	1,733	4,656	—	4,656
Provision for contract losses	—	—	—	33,737	—	33,737
Total cost of revenue	3,423	1,375	2,048	44,061	2,736	41,325
<b>Gross profit (loss)</b>	(323)	827	(1,150)	(35,030)	827	(35,857)
<b>Operating expenses:</b>						
Selling, general, and administrative	18,268	8,687	9,581	60,733	15,099	45,634
Research and development	11,168	4,618	6,550	26,448	8,891	17,557
Total operating expenses	29,436	13,305	16,131	87,181	23,990	63,191
<b>Operating loss</b>	(29,759)	(12,478)	(17,281)	(122,211)	(23,163)	(99,048)
<b>Other income (expense), net:</b>						
Interest income, net	259	197	62	666	407	259
SAFE instruments remeasurement	—	(15,533)	15,533	—	(62,993)	62,993
Gain (loss) warrant remeasurement	369	(322)	691	12,679	(2,604)	15,283
Other income, net	1,256	(140)	1,396	1,071	(312)	1,383
<b>Net loss before taxes</b>	(27,875)	(28,276)	401	(107,795)	(88,665)	(19,130)
Income tax benefit	46	—	46	781	—	781
<b>Net loss</b>	\$ (27,829)	\$ (28,276)	\$ 447	\$ (107,014)	\$ (88,665)	\$ (18,349)

*Revenue and Gross Profit (Loss)*

During the three and nine months ended September 30, 2022, we recognized revenue of \$3.1 million and \$9.0 million, respectively, driven primarily by project revenue for work associated with the development and planned deployment of our technology and product offerings on a commercial scale, including \$1.7 million and \$4.7 million, respectively, of grant revenue recognized under the U.S. Department of Energy Solar Energy Technologies Office (the “DOE Award”). Pursuant to the terms of the commercial-scale demonstration agreement (the “CSDA”) executed with Woodside Energy (USA) Inc. (“Woodside”) in March 2022, we will complete the engineering, procurement, and construction of a new 5 MWe concentrated solar energy facility to be built in Mojave, California (the “Facility”) for the customer’s use in testing, research and development. The Facility is expected to serve as a fully operational model for the customer’s use in demonstrating the Company’s technology and product offerings on a commercial scale to aid in the development, engineering, and construction of larger, commercial scale facilities under separate agreements between the Company and the customer or other third-party customers.

During the three months ended September 30, 2022, we recognized a gross loss of \$0.3 million associated primarily with the CSDA. During the nine months ended September 30, 2022, we recognized a gross loss of \$35.0 million driven primarily by recognition of a contract loss of \$32.9 million related to the CSDA and Facility. The contract loss reflects our best estimate of the full expected loss on the Facility given the consideration expected to be realized under the CSDA (net of the fair value of related warrants granted to the customer) and the DOE Award relative to the total cost at completion. Revenue expected to be recorded for the Mojave, California project is approximately \$84.5 million over the full term of the project, consisting of \$45.5 million for the CSDA, of which \$40.4 million is identified as noncancellable at September 30, 2022, and the DOE Award of \$39.0 million. Our cost estimates as of September 30, 2022 for the anticipated final scope of

the Facility are subject to further refinement as we continue detailed engineering and design with the customers, obtain firm pricing from subcontractors, order long-lead items, and better understand short- and long-term commodity and market impacts on cost inputs to the CSDA and Facility. As a result, the actual loss for the CSDA and Facility could vary from our current estimates.

During the three and nine months ended September 30, 2021, we recognized revenue of \$2.2 million and \$3.6 million, respectively, and \$0.8 million gross profit associated with engineering and design services contracts which was largely related to a predecessor contract to the CSDA.

#### *Selling, General, and Administrative Expense*

For the three and nine months ended September 30, 2022, SG&A expense increased \$9.6 million and \$45.6 million, respectively, compared to the same periods in 2021, driven primarily by our growth to support commercial operations, resulting in higher headcount and related employee expenses of \$8.0 million and \$35.4 million, respectively, with the most notable increase being non-cash share-based compensation expense of \$6.3 million and \$27.0 million, respectively. For the same comparative periods, professional and consulting services increased by \$0.3 million and \$4.7 million, respectively, associated primarily with being a newly public company and the corresponding need to support and develop our accounting, legal, and information technology infrastructures. Facilities and office related expenses increased by \$1.3 million and \$5.5 million, respectively, to support space requirements for our manufacturing facility in Long Beach, California and corporate headquarters in Pasadena, California.

#### *Research and Development Expense*

For the three and nine months ended September 30, 2022, R&D expense increased \$6.6 million and \$17.6 million, respectively, compared to the same periods in 2021, primarily due to headcount growth and related consulting services associated with our efforts to ramp up and further develop our commercial-scale offering.

#### *SAFE Instruments Remeasurement*

In the first half of 2021, we entered into Simple Agreements for Future Equity (“SAFE Instruments”) financing transactions with third party investors in connection with a private round of funding to provide investors an opportunity to convert the SAFE Instruments into common or preferred stock upon defined triggering events. Pursuant to the terms of these agreements, the SAFE Instruments were converted to common stock immediately prior to the closing of the Business Combination on December 30, 2021. Due to the terms of the SAFE Instruments, the SAFE Instruments were measured at fair value at each reporting period resulting in the recognition of losses of \$15.5 million and \$63.0 million during the three and nine months ended September 30, 2021, respectively.

#### *Warrant Remeasurement*

As part of the Business Combination, we assumed the outstanding public and private warrants of Athena, which are accounted for at fair value based on the closing share price of the Company’s common stock. The warrant remeasurement gains of \$0.4 million and \$12.7 million for the three and nine months ended September 30, 2022, respectively, and losses of \$0.3 million and \$2.6 million for the three and nine months ended September 30, 2021, respectively, are associated primarily with changes in the Company’s closing share price. The Company’s share price declined from \$15.52 on December 31, 2021 to \$1.86 on September 30, 2022 and the Company’s share price increased from \$9.61 on May 7, 2021, the date of Athena’s initial public offering, to \$9.93 on September 30, 2021.

## Liquidity and Capital Resources

Heliogen's principal source of liquidity has historically been proceeds from private investors through the issuance of SAFE Instruments, preferred stock, and common stock. Upon closing of the Business Combination with Athena completed in December 2021, Heliogen received net cash proceeds of \$159.4 million. In March 2022, Heliogen entered a series of commercial agreements with a customer for the commercial-scale demonstration and deployment of Heliogen's AI-enabled concentrated solar energy technology in California and the marketing of Heliogen's technology in Australia and is in the process of negotiating further revenue contracts. These contracts will provide a significant source of cash for the Company. Our principal uses of cash are for project-related expenditures, SG&A and R&D expenditures in support of Heliogen's development of its technology and operational growth efforts. To date, Heliogen has not had any material bank debt and has no material outstanding debt on the balance sheet as of September 30, 2022. Total liquidity for Heliogen, including cash and cash equivalents, available-for-sale investments, and other liquid securities with maturities greater than one year is as follows:

<i>\$ in thousands</i>	September 30, 2022	December 31, 2021
Cash and cash equivalents	\$ 35,444	\$ 190,081
Investments, available for sale (maturities less than one year)	124,034	32,332
LT investments, available for sale (maturities greater than one year) <sup>(1)</sup>	4,769	—
Total liquidity	<u>\$ 164,247</u>	<u>\$ 222,413</u>

(1) For more information on other liquid securities with maturities greater than one year, see Note 12 to our condensed consolidated financial statements.

With the funds raised in connection with the Business Combination, we believe that our existing liquidity should provide the ability to meet our contractual obligations and continue our current R&D efforts and development of our first commercial facilities and will be sufficient to meet our cash requirements for the next 12 months. However, we could potentially use these available financial resources sooner than expected due to delays in project execution or higher than anticipated costs and therefore may need to incur additional indebtedness or issue additional equity to meet our operating needs. In the event that additional financing is required from outside sources, we may not be able to raise it on terms acceptable to us or at all. If we are unable to raise additional capital or generate cash flows necessary to expand our operations and invest in developing our new technologies, this could reduce our ability to compete successfully and harm our business, growth and results of operations. While we believe we will meet longer-term expected future cash requirements and obligations through a combination of our existing cash and cash equivalent balances, cash flow from operations, and issuances of equity securities or debt offerings, our future capital requirements and the adequacy of available funds will depend on many factors, including those disclosed in Part I, Item 1A Risk Factors in our 2021 Form 10-K/A for the year ended December 31, 2021.

## Summary of Cash Flows

A summary of the Company's cash flows from operating, investing and financing activities is presented in the following table:

<i>\$ in thousands</i>	Nine Months Ended September 30,	
	2022	2021
Net cash used in operating activities	\$ (49,545)	\$ (18,147)
Net cash used in investing activities	(104,182)	(40,459)
Net cash (used in) provided by financing activities	(255)	81,898

### *Net Cash from Operating Activities*

Net cash used in operating activities was \$49.5 million for the nine months ended September 30, 2022 compared to \$18.1 million net cash used in operating activities for the nine months ended September 30, 2021, resulting in a \$31.4 million increase in use of operating cash. Cash flows used in operating activities result primarily from Heliogen's ramp-up of commercial operations and increases in headcount and are also affected by changes in operating assets and liabilities which consist primarily of working capital balances for our projects. Working capital levels may vary and are impacted by

the stage of completion and commercial terms of projects. The primary components of our working capital accounts are accounts receivable, contract assets, accounts payable, and contract liabilities.

#### *Net Cash from Investing Activities*

For the nine months ended September 30, 2022, cash used in investing activities was \$104.2 million and consisted mostly of cash invested in available-for-sale debt securities of \$238.0 million offset by proceeds from maturities and sales of available-for-sale debt securities of \$75.3 million and \$65.8 million, respectively. We also incurred capital expenditures of \$7.3 million during the period, driven primarily to support growth in our commercial operations, machinery, equipment and improvements for our new Long Beach manufacturing facility, and office and computer equipment to support our headcount growth.

Cash used in investing activities for the nine months ended September 30, 2021 was \$40.5 million and primarily represents cash invested in available-for-sale debt securities of \$41.6 million offset by proceeds from maturities of available-for-sale debt securities of \$4.3 million, and cash consideration paid for the HelioHeat acquisition, net of acquired cash, of \$1.7 million.

#### *Net Cash from Financing Activities*

Cash used in financing activities totaled \$0.3 million for the nine months ended September 30, 2022, driven primarily by \$1.3 million in transaction costs paid related to the Business Combination, which were previously accrued at December 31, 2021, offset by \$1.0 million in cash received from the exercise of stock options. Cash provided by financing activities totaled \$81.9 million for the nine months ended September 30, 2021 and was due primarily to \$83.4 million in cash received from the issuance of the SAFE instruments slightly offset by financing costs of \$1.5 million.

#### **Critical Accounting Estimates**

There have been no material changes to our discussion of critical accounting estimates from those set forth in our 2021 Annual Report on Form 10-K/A for the year ended December 31, 2021.

#### **Item 3. Quantitative and Qualitative Disclosures About Market Risk**

We are a smaller reporting company as defined by Item 10 of Regulation S-K and are not required to provide the information otherwise required under this item.

#### **Item 4. Controls and Procedures**

##### *Evaluation of Disclosure Controls and Procedures*

We maintain “disclosure controls and procedures,” as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended, or the Exchange Act, that are designed to ensure that information required to be disclosed in the reports that we file or submit under the Exchange Act is (1) recorded, processed, summarized and reported, within the time periods specified in the SEC’s rules and forms and (2) accumulated and communicated to our management, including our principal executive officer and principal financial officer, to allow timely decisions regarding required disclosure. Management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures.

In connection with the preparation and audit of our financial statements as of and for the fiscal year ended December 31, 2021, we identified certain material weaknesses in our internal control over financial reporting, which is an integral component of our disclosure controls and procedures. The material weaknesses existing at December 31, 2021, for which remediation is ongoing at September 30, 2022, are as follows:

- We did not design or maintain an effective control environment specific to the areas of financial reporting and our close process, including effective review of technical accounting matters.
- We did not design or maintain an effective control environment to ensure proper segregation of duties, including separate review and approval of journal entries and access within our accounting system.

In addition to the actions we took during 2021 to remediate the deficiencies in our internal control over financial reporting we are implementing additional processes and controls designed to address the underlying causes associated with the above-mentioned deficiencies. We are committed to remediating the deficiencies described above in a timely manner.

Our incremental efforts taken in 2022 to implement measures designed to improve our internal control over financial reporting to remediate these deficiencies include, but are not limited to, the following:

- During the three months ended September 30, 2022, we continued the implementation of additional functionality within our company-wide enterprise resource planning system.
- We engaged a large multinational accounting firm to provide certain advisory and internal audit services, under the oversight of the audit committee of our board of directors, including, but not limited to, advising on the remediation of the material weaknesses identified above, performing a comprehensive internal controls gap assessment, assist in further enhancement and development of the Company's business processes, and perform testing of internal controls, as applicable. We expect all of these services will significantly enhance our internal controls environment and provide a basis on which management can assess and conclude upon the remediation of the material weaknesses.
- We developed and improved recurring accounting processes providing more timely and detailed review of complex and routine areas, including internal stakeholder engagement to timely and accurately identify new or complex transactions.
- We hired additional full-time personnel to strengthen the review process, improve segregation of duties, provide additional oversight and support of the financial and accounting systems and assist in the design and implementation of internal controls.

These additional resources, policies and procedures are designed to enable us to broaden the scope and quality of our internal review of underlying information related to financial reporting and to formalize and enhance our internal control over financial reporting environment. We are committed to continue to take steps to address the underlying causes of the material weaknesses in a timely manner and will continue to monitor the effectiveness of our remediation plan and will refine as appropriate. While we are undertaking efforts to remediate these material weaknesses, the material weaknesses will not be considered remediated until our remediation plan has been fully implemented, the applicable controls operate for a sufficient period of time, and we have concluded, through testing, that the newly implemented and enhanced controls are operating effectively.

With the foregoing in mind, our management, with the participation of our Chief Executive Officer and Chief Financial Officer, 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 Quarterly Report on Form 10-Q. Based on such evaluation, our Chief Executive Officer and Chief Financial Officer have concluded that as of September 30, 2022, our disclosure controls and procedures were not effective at a reasonable assurance level, as a result of the material weaknesses previously discussed. Notwithstanding the existence of the material weaknesses described above, management believes that the condensed consolidated financial statements in this Quarterly Report on Form 10-Q fairly state, in all material respects, the Company's financial position, results of operations and cash flows for all periods and dates presented in accordance with U.S. GAAP.

#### ***Changes in Internal Control over Financial Reporting***

Other than in connection with executing upon the implementation of the remediation measures as described above, there were no changes in our internal control over financial reporting identified in connection with the evaluation required by Rule 13a-15(d) and 15d-15(d) of the Exchange Act that occurred during the three months ended September 30, 2022 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

## Part II - Other Information

### Item 1. Legal Proceedings

Information relating to various commitments and contingencies is described in Note 9 to our condensed consolidated financial statements in Part I, Item 1 of this Quarterly Report on Form 10-Q.

### Item 1A. Risk Factors

There are no material changes from the risk factors previously disclosed in Part I, Item 1A in our Annual Report on Form 10-K/A for the year ended December 31, 2021.

### Item 2. Unregistered Sales of Equity Securities and Use of Proceeds

Not applicable.

### Item 3. Defaults Upon Senior Securities

Not applicable.

### Item 4. Mine Safety Disclosures

Not applicable.

### Item 5. Other Information

On November 3, 2022, the board of directors of the Company approved and adopted the Second Amended and Restated Bylaws (the "Bylaws"), which became effective the same day, in order to, among other things, address recently adopted amendments to Rule 14a-19 under the Exchange Act, as amended, by clarifying that no person may solicit proxies in support of a director nominee other than the Board's nominees unless such person has complied with Rule 14a-19, and that any person soliciting proxies in support of a director nominee other than the Board's nominees must comply with the requirements to provide notices required under Rule 14a-19 in a timely manner and deliver reasonable evidence that the Rule 14a-19 requirements have been met. The preceding summary of the amendments to the Bylaws is qualified in its entirety by reference to, and should be read in connection with, the complete copy of the Second Amended and Restated Bylaws filed herewith as Exhibit 3.2.

**Item 6. Exhibits**

Exhibit Number	Description	Incorporated by Reference			
		Form	File No.	Exhibit	Filing Date
3.1	<a href="#">Second Amended and Restated Certificate of Incorporation of Heliogen, Inc.</a>	8-K	001-40209	3.1	January 6, 2022
3.2*	<a href="#">Second Amended and Restated Bylaws of Heliogen, Inc.</a>				
31.1**	<a href="#">Certification of Principal Executive Officer Pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.</a>				
31.2**	<a href="#">Certification of Principal Financial Officer Pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.</a>				
32.1**	<a href="#">Certification of Principal Executive Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.</a>				
32.2**	<a href="#">Certification of Principal Financial Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.</a>				
101.INS*	Inline XBRL Instance Document				
101.CAL*	Inline XBRL Taxonomy Extension Calculation Linkbase Document				
101.SCH*	Inline XBRL Taxonomy Extension Schema 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 (formatted as Inline XBRL and contained in Exhibit 101).				

\* Filed herewith.

\*\* Furnished herewith and not deemed to be “filed” for purposes of Section 18 of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), and shall not be deemed to be incorporated by reference into any filing under the Securities Act of 1933, as amended, or the Exchange Act (whether made before or after the date of the Form 10-Q), irrespective of any general incorporation language contained in such filing.

**SIGNATURES**

Pursuant to the 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.

Dated: November 8, 2022

Dated: November 8, 2022

**Heliogen, Inc.**

/s/ Bill Gross

Bill Gross  
Chief Executive Officer  
*(Principal Executive Officer)*

/s/ Christiana Obiaya

Christiana Obiaya  
Chief Financial Officer  
*(Principal Financial Officer and Principal Accounting Officer)*

**SECOND AMENDED AND RESTATED BYLAWS**

**OF**

**HELIOGEN, INC.  
(A DELAWARE CORPORATION)**

**November 3, 2022**

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## Table of Contents

	Page
<b>ARTICLE I OFFICES</b>	<b>4</b>
Section 1. Registered Office	4
Section 2. Other Offices	4
<b>ARTICLE II CORPORATE SEAL</b>	<b>4</b>
Section 3. Corporate Seal	4
<b>ARTICLE III STOCKHOLDERS' MEETINGS</b>	<b>4</b>
Section 4. Place of Meetings	4
Section 5. Annual Meetings.	4
Section 6. Special Meetings	9
Section 7. Notice of Meetings	10
Section 8. Quorum	10
Section 9. Adjournment and Notice of Adjourned Meetings	11
Section 10. Voting Rights	12
Section 11. Joint Owners of Stock	12
Section 12. List of Stockholders	12
Section 13. Action Without Meeting	12
Section 14. Organization	13
<b>ARTICLE IV DIRECTORS</b>	<b>14</b>
Section 15. Number and Term of Office	14
Section 16. Powers	14
Section 17. Classes of Directors	14
Section 18. Vacancies	14
Section 19. Resignation	15
Section 20. Removal	15
Section 21. Meetings.	15
Section 22. Quorum and Voting.	16

**Table of Contents**  
(continued)

		Page
Section 23.	Action Without Meeting	16
Section 24.	Fees and Compensation	17
Section 25.	Committees.	17
Section 26.	Duties of Chairperson of the Board of Directors and Lead Independent Director	18
Section 27.	Organization	18
Section 28.	Interested Directors	18
<b>ARTICLE V OFFICERS</b>		<b>19</b>
Section 29.	Officers Designated	19
Section 30.	Tenure and Duties of Officers.	19
Section 31.	Delegation of Authority	21
Section 32.	Resignations	21
Section 33.	Removal	21
<b>ARTICLE VI EXECUTION OF CORPORATE INSTRUMENTS AND VOTING OF SECURITIES OWNED BY THE CORPORATION</b>		<b>21</b>
Section 34.	Execution of Corporate Instruments	21
Section 35.	Voting of Securities Owned By the Corporation	22
<b>ARTICLE VII SHARES OF STOCK</b>		<b>22</b>
Section 36.	Form and Execution of Certificates	22
Section 37.	Lost Certificates	22
Section 38.	Transfers.	22
Section 39.	Fixing Record Dates.	22
Section 40.	Registered Stockholders	23
Section 41.	Additional Powers of the Board	23
<b>ARTICLE VIII OTHER SECURITIES OF THE CORPORATION</b>		<b>23</b>
Section 42.	Execution of Other Securities	23
<b>ARTICLE IX DIVIDENDS</b>		<b>24</b>

**Table of Contents**  
**(continued)**

	Page
Section 43. Declaration of Dividends	24
Section 44. Dividend Reserve	24
ARTICLE X FISCAL YEAR	24
Section 45. Fiscal Year	24
ARTICLE XI INDEMNIFICATION	24
Section 46. Indemnification of Directors, Executive Officers, Other Officers, Employees and Other Agents.	24
ARTICLE XII NOTICES	27
Section 47. Notices.	27
ARTICLE XIII AMENDMENTS	28
Section 48. Amendments	28

**SECOND AMENDED AND RESTATED BYLAWS  
OF  
HELIOGEN, INC.  
(A DELAWARE CORPORATION)**

**November 3, 2022**

**ARTICLE I**

**OFFICES**

**Section 1. Registered Office.** The registered office of Heliogen, Inc. (the “*Corporation*”) in the State of Delaware shall be Corporation Service Company, 251 Little Falls Drive, in the City of Wilmington, County of New Castle, Delaware 19808.

**Section 2. Other Offices.** The Corporation shall also have and maintain an office or principal place of business at such place as may be fixed by the board of directors of the Corporation (the “*Board of Directors*”), and may also have offices at such other places, both within and without the State of Delaware, as the Board of Directors may from time to time determine or as may be necessary or convenient to the business of the Corporation.

**ARTICLE II**

**CORPORATE SEAL**

**Section 3. Corporate Seal.** The Board of Directors may adopt a corporate seal. If adopted, the corporate seal shall consist of a die bearing the name of the Corporation and the inscription, “Corporate Seal-Delaware.” Said seal may be used by causing it or a facsimile thereof to be impressed or affixed or reproduced or otherwise.

**ARTICLE III**

**STOCKHOLDERS’ MEETINGS**

**Section 4. Place of Meetings.** Meetings of the stockholders of the Corporation may be held at such place, either within or without the State of Delaware, as may be determined from time to time by the Board of Directors. The Board of Directors may, in its sole discretion, determine that the meeting shall not be held at any place, but may instead be held solely by means of remote communication as provided under the Delaware General Corporation Law (“*DGCL*”).

**Section 5. Annual Meetings.**

(a) The annual meeting of the stockholders of the Corporation, for the purpose of election of directors and for such other business as may properly come before it, shall be held on such date, time and place as may be designated from time to time by the Board of Directors. Any annual meeting of stockholders previously scheduled by the Board may be postponed, rescheduled or cancelled by the Board or any director or officer of the Corporation to whom the Board delegates such authority. Nominations of persons for election to the Board of Directors of the Corporation and the proposal of

business to be considered by the stockholders may be made at an annual meeting of stockholders: (i) pursuant to the Corporation's notice of meeting (or any supplement thereto) of stockholders (with respect to business other than nominations); (ii) brought specifically by or at the direction of the Board of Directors or a duly authorized committee thereof; (iii) as may be provided in the certificate of designation for any class or series of preferred stock or (iv) by any stockholder of the Corporation who was a stockholder of record at the time of giving the stockholder's notice provided for in Section 5(b) of these Bylaws (these "**Bylaws**"), who is entitled to vote at the meeting and who complied with the notice procedures set forth in this Section 5. For the avoidance of doubt, clause (iii) above shall be the exclusive means for a stockholder to make nominations and submit other business (other than matters properly included in the Corporation's notice of meeting of stockholders and proxy statement under Rule 14a-8 under the Securities Exchange Act of 1934, as amended, and the rules and regulations thereunder (the "**1934 Act**")) before an annual meeting of stockholders.

**(b)** At an annual meeting of the stockholders, only such business shall be conducted as is a proper matter for stockholder action under the DGCL, the Certificate of Incorporation and these Bylaws, and only such nominations shall be made and such business shall be conducted as shall have been properly brought before the meeting in accordance with the procedures below.

**(i)** For nominations for the election to the Board of Directors to be properly brought before an annual meeting by a stockholder pursuant to clause (iii) of Section 5(a), the stockholder must deliver written notice to the Secretary of the Corporation at the principal executive offices of the Corporation on a timely basis as set forth in Section 5(b)(iii) and must update and supplement such written notice on a timely basis as set forth in Section 5(c). Such stockholder's notice shall set forth: (A) as to each nominee such stockholder proposes to nominate at the meeting: (1) the name, age, business address and residence address of such nominee; (2) the principal occupation or employment of such nominee; (3) the class or series and number of shares of each class or series of capital stock of the Corporation which are owned of record and beneficially (within the meaning of Rule 13d-3 under the 1934 Act) by such nominee; (4) the date or dates on which such shares were acquired and the investment intent of such acquisition; and (5) such other information concerning such nominee as would be required to be disclosed in a proxy statement soliciting proxies for the election of such nominee as a director in an election contest (even if an election contest is not involved and whether or not proxies are being or will be solicited), or that is otherwise required to be disclosed or provided to the Corporation pursuant to Section 14 of the 1934 Act and the rules and regulations promulgated thereunder (including such person's written consent to being named in the Corporation's proxy statement and associated proxy card as a nominee of the stockholder and to serving as a director if elected); and (B) all of the information required by Section 5(b)(iv). The Corporation may require any proposed nominee to furnish such other information as it may reasonably require to determine the eligibility of such proposed nominee to serve as an independent director (as such term is used in any applicable stock exchange listing requirements or applicable law) of the Corporation or on any committee or sub-committee of the Board of Directors under any applicable stock exchange listing requirements or applicable law, or that the Board of Directors determines, in its sole discretion, could be material to a reasonable stockholder's understanding of the independence, or lack thereof, of such proposed nominee. The number of nominees a stockholder may nominate for election at the annual meeting (or in the case of a stockholder giving the notice on behalf of a beneficial owner, the number of nominees a stockholder may nominate for election at the annual meeting on behalf of such beneficial owner) shall not exceed the number of directors to be elected at such annual meeting.

**(ii)** For business other than nominations for the election to the Board of Directors to be properly brought before an annual meeting by a stockholder pursuant to clause (iii) of

Section 5(a) of these Bylaws, the stockholder must deliver written notice to the Secretary of the Corporation at the principal executive offices of the Corporation on a timely basis as set forth in Section 5(b)(iii), and must update and supplement such written notice on a timely basis as set forth in Section 5(c). Such stockholder's notice shall set forth: (A) as to each matter such stockholder proposes to bring before the meeting, a brief description of the business desired to be brought before the meeting, the text of the proposal or business (including the text of any resolutions proposed for consideration and in the event that such business includes a proposal to amend these bylaws, the language of the proposed amendment), the reasons for conducting such business at the meeting, and any material interest (including any anticipated benefit of such business to any Proponent (as defined below) other than solely as a result of its ownership of the Corporation's capital stock, that is material to any Proponent individually, or to the Proponents in the aggregate) in such business of any Proponent; and (B) the information required by Section 5(b)(iv).

(iii) To be timely, the written notice required by Section 5(b)(i) or 5(b)(ii) must be received by the Secretary of the Corporation at the principal executive offices of the Corporation not later than the close of business on the ninetieth (90<sup>th</sup>) day nor earlier than the close of business on the one hundred twentieth (120<sup>th</sup>) day prior to the first anniversary of the immediately preceding year's annual meeting; *provided, however*, that, subject to the last sentence of this Section 5(b)(iii), in the event that no annual meeting was held during the preceding year or the date of the annual meeting is advanced more than thirty (30) days prior to or delayed by more than thirty (30) days after the anniversary of the preceding year's annual meeting, notice by the stockholder to be timely must be so received not earlier than the close of business on the one hundred twentieth (120<sup>th</sup>) day prior to such annual meeting and not later than the close of business on the later of the ninetieth (90<sup>th</sup>) day prior to such annual meeting or the closing of business on the tenth (10<sup>th</sup>) day following the day on which public announcement of the date of such meeting is first made. In no event shall an adjournment or a postponement of an annual meeting for which notice has been given, or the public announcement thereof has been made, commence a new time period (or extend any time period) for the giving of a stockholder's notice as described above.

(iv) The written notice required by Section 5(b)(i) or 5(b)(ii) shall also set forth, as of the date of the notice and as to the stockholder giving the notice and the beneficial owner, if any, on whose behalf the nomination or proposal is made (each, a "**Proponent**" and collectively, the "**Proponents**"): (A) the name and address of each Proponent, as they appear on the Corporation's books and records; (B) the class, series and number of shares each class or series of the capital stock of the Corporation that are, directly or indirectly, owned beneficially and of record by each Proponent (provided, that for purposes of this Section 5(b)(iv), such Proponent shall in all events be deemed to beneficially own all shares of any class or series of capital stock of the Corporation as to which such Proponent has a right to acquire beneficial ownership at any time in the future); (C) a description of any agreement, arrangement or understanding (whether oral or in writing) with respect to such nomination or proposal (and/or the voting of shares of any class or series of capital stock of the Corporation) between or among any Proponent and any of its affiliates or associates, and any others (including their names) acting in concert, or otherwise under the agreement, arrangement or understanding, with any of the foregoing; (D) a representation that the Proponents are holders of record or beneficial owners, as the case may be, of shares of the Corporation at the time of giving notice, will be entitled to vote at the meeting and intend to appear in person or by proxy at the meeting to nominate the person or persons specified in the notice (with respect to a notice under Section 5(b)(i)) or to propose the business that is specified in the notice (with respect to a notice under Section 5(b)(ii)); (E) a representation as to whether the Proponents (x) intend to solicit proxies from the required number of the Corporation's voting shares in support of any proposed nominee in accordance with and as required by Rule 14a-19 promulgated under the 1934 Act (with respect to a notice under Section 5(b)(i)) or (y) intend to deliver, or make available, a proxy statement and form of proxy to such number of holders of the Corporation's voting shares that would be sufficient to carry such proposal or otherwise solicit proxies or votes from stockholders in support of such proposal (with respect to a notice under Section 5(b)(ii)); (F) to the extent known by any Proponent, the

name and address of any other stockholder supporting the proposal on the date of such stockholder's notice; and (G) a description of all Derivative Transactions (as defined below) by each Proponent during the previous twelve (12) month period, including the date of the transactions and the class, series and number of securities involved in, and the material economic terms of, such Derivative Transactions.

(c) A stockholder providing the written notice required by Section 5(b)(i) or (ii) shall update and supplement such notice in writing, if necessary, so that the information provided or required to be provided in such notice is true and correct in all material respects as of (i) the record date for the determination of stockholders entitled to notice of the meeting and (ii) the date that is five (5) Business Days (as defined below) prior to the meeting and, in the event of any adjournment or postponement thereof, five (5) Business Days prior to such adjourned or postponed meeting. In the case of an update and supplement pursuant to clause (i) of this Section 5(c), such update and supplement shall be received by the Secretary of the Corporation at the principal executive offices of the Corporation not later than five (5) Business Days after the later of the record date for the determination of stockholders entitled to notice of the meeting or the public announcement of such record date. In the case of an update and supplement pursuant to clause (ii) of this Section 5(c), such update and supplement shall be received by the Secretary of the Corporation at the principal executive offices of the Corporation not later than two (2) Business Days prior to the date for the meeting, and, in the event of any adjournment or postponement thereof, two (2) Business Days prior to such adjourned or postponed meeting.

(d) Notwithstanding anything in Section 5(b)(iii) to the contrary, in the event that the number of directors in an Expiring Class (as defined below) is increased effective after the time period for which nominations would otherwise be due under Section 5(b)(iii) and there is no public announcement by the Corporation naming all of the nominees for the new positions created by such increase at least one hundred (100) days before the first anniversary of the immediately preceding year's annual meeting, a stockholder's notice required by this Section 5 and which complies with the requirements in Section 5(b)(i), other than the timing requirements in Section 5(b)(iii), shall also be considered timely, but only with respect to nominees for any new positions in such Expiring Class created by such increase, if it shall be received by the Secretary of the Corporation at the principal executive offices of the Corporation not later than the close of business on the tenth (10th) day following the day on which such public announcement is first made by the Corporation. For purposes of this section, an "**Expiring Class**" shall mean a class of directors whose term shall expire at the next annual meeting of stockholders.

(e) A person shall not be eligible for election or re-election as a director at an annual meeting, unless the person is nominated in accordance with clause (ii), (iii) or (iv) of Section 5(a) and in accordance with the procedures set forth in Section 5(b), Section 5(c), and Section 5(d), as applicable. Only such business shall be conducted at any annual meeting of the stockholders of the corporation as shall have been brought before the meeting in accordance with clauses (i), (ii), (iii) or (iv) of Section 5(a) and in accordance with the procedures set forth in Section 5(b) and Section 5(c), as applicable. Except as otherwise required by law, the chairperson of the meeting shall have the power and duty to determine whether a nomination or any business proposed to be brought before the meeting was made, or proposed, as the case may be, in accordance with the procedures set forth in these Bylaws and, if any proposed nomination or business is not in compliance with these Bylaws, or the Proponent does not act in accordance with the representations in Sections 5(b)(iv)(D) and 5(b)(iv)(E), to declare that such proposal or nomination shall not be presented for stockholder action at the meeting and shall be disregarded, notwithstanding that proxies in respect of such nominations or such business may have been solicited or received. Notwithstanding anything to the contrary in these Bylaws, unless otherwise required by law, if any Proponent (i) provides notice pursuant to Rule 14a-19(b) promulgated under the 1934 Act with respect to any proposed nominee and (ii) subsequently fails to comply with the requirements of Rule 14a-19 promulgated under the 1934 Act (or fails to timely provide reasonable evidence sufficient to satisfy the Corporation that such Proponent has met the requirements of

Rule 14a-19(a)(3) promulgated under the 1934 Act in accordance with the following sentence), then the nomination of each such proposed nominee shall be disregarded, notwithstanding that proxies or votes in respect of the election of such proposed nominees may have been received by the Corporation (which proxies and votes shall be disregarded). Upon request by the Corporation, if any Proponent provides notice pursuant to Rule 14a-19(b) promulgated under the 1934 Act, such Proponent shall deliver to the Corporation, no later than five Business Days prior to the applicable meeting reasonable evidence that it has met the requirements of Rule 14a-19(a)(3) promulgated under the 1934 Act.

(f) Notwithstanding the foregoing provisions of this Section 5, unless otherwise required by applicable law, if the stockholder (or a qualified representative of the stockholder) does not appear at the annual meeting of stockholders of the Corporation to present a nomination or proposed business, such nomination shall be disregarded and such proposed business shall not be transacted, notwithstanding that proxies in respect of such vote may have been received by the Corporation. For purposes of this Section 5, to be considered a qualified representative of the stockholder, a person must be a duly authorized officer, manager or partner of such stockholder or must be authorized by a writing executed by such stockholder or an electronic transmission delivered by such stockholder to act for such stockholder as proxy at the meeting of stockholders and such person must produce such writing or electronic transmission, or a reliable reproduction of the writing or electronic transmission, at the meeting of stockholders.

(g) For purposes of Sections 5 and 6,

(i) “*affiliates*” and “*associates*” shall have the meanings set forth in Rule 405 under the Securities Act of 1933, as amended (the “*1933 Act*”).

(ii) “*Business Day*” means any day other than Saturday, Sunday or a day on which banks are closed in New York City, New York.

(iii) “*close of business*” means 6:00 p.m. local time at the principal executive offices of the Corporation on any calendar day, whether or not the day is a Business Day;

(iv) “*Derivative Transaction*” means any agreement, arrangement, interest or understanding entered into by, or on behalf or for the benefit of, any Proponent or any of its affiliates or associates, whether record or beneficial:

(A) the value of which is derived in whole or in part from the value of any class or series of shares or other securities of the Corporation,

(B) which otherwise provides any direct or indirect opportunity to gain or share in any gain derived from a change in the value of securities of the Corporation,

(C) the effect or intent of which is to mitigate loss, manage risk or benefit from changes in value or price with respect to any securities of the Corporation, or

(D) which provides the right to vote or increase or decrease the voting power of, such Proponent, or any of its affiliates or associates, directly or indirectly, with respect to any securities of the Corporation,

which agreement, arrangement, interest or understanding may include, without limitation, any option, warrant, debt position, note, bond, convertible security, swap, stock appreciation right, short position,

profit interest, hedge, right to dividends, voting agreement, performance-related fee or arrangement to borrow or lend shares (whether or not subject to payment, settlement, exercise or conversion in any such class or series), and any proportionate interest of such Proponent in the securities of the Corporation held by any general or limited partnership, or any limited liability company, of which such Proponent is, directly or indirectly, a general partner or managing member.

(v) “*public announcement*” shall mean disclosure in a press release reported by the Dow Jones News Service, Associated Press, Business Wire, GlobeNewswire or comparable national news service or in a document publicly filed by the Corporation with the Securities and Exchange Commission pursuant to Section 13, 14 or 15(d) of the 1934 Act, or by such other means reasonably designed to inform the public or security holders in general of such information including, without limitation, posting on the Corporation’s investor relations website.

#### **Section 6. Special Meetings.**

(a) Special meetings of the stockholders of the Corporation may be called, for any purpose as is a proper matter for stockholder action under Delaware law, only by (i) the Chairperson of the Board of Directors, (ii) the Chief Executive Officer or the President if the Chairperson of the Board of Directors is unavailable, or (iii) the Board of Directors pursuant to a resolution adopted by a majority of the total number of authorized directors (whether or not there exist any vacancies in previously authorized directorships at the time any such resolution is presented to the Board of Directors for adoption). The ability of the stockholders of the Corporation to call a special meeting of stockholders is hereby specifically denied.

(b) The Board of Directors shall determine the date, time and place, if any, of such special meeting. Upon determination of the date, time and place, if any, of the meeting, the Secretary of the Corporation shall cause a notice of meeting to be given to the stockholders entitled to vote, in accordance with the provisions of Section 7 of these Bylaws. No business may be transacted at such special meeting other than specified in the notice of meeting. The Chairperson of the Board, the Chief Executive Officer or the Board of Directors may postpone, reschedule or cancel any special meeting of stockholders previously called by any of them.

(c) Nominations of persons for election to the Board of Directors may be made at a special meeting of stockholders at which directors are to be elected (i) by or at the direction of the Board of Directors (or any duly authorized committee thereof) or (ii) provided that one or more directors are to be elected at such meeting pursuant to the Corporation’s notice of meeting, by any stockholder of the Corporation who is a stockholder of record at the time of giving notice provided for in this paragraph, who shall be entitled to vote at the meeting and who delivers written notice to the Secretary of the Corporation setting forth the information required by Section 5(b)(i). In the event the Corporation calls a special meeting of stockholders for the purpose of submitting a proposal to stockholders for the election of one or more directors to fill any vacancy or newly created directorship on the Board of Directors, any such stockholder of record may nominate a person or persons (as the case may be), for election to such position(s) as specified in the Corporation’s notice of meeting, if written notice setting forth the information required by Section 5(b)(i) of these Bylaws shall be received by the Secretary of the Corporation at the principal executive offices of the Corporation not earlier than one hundred twenty (120) days prior to such special meeting and not later than the close of business on the later of the ninetieth (90<sup>th</sup>) day prior to such meeting or the tenth (10<sup>th</sup>) day following the day on which the Corporation first makes a public announcement made of the date of the special meeting at which directors are to be elected. The stockholder shall also update and supplement such information as required under Section 5(c). In no event shall an adjournment or a postponement of a special meeting for which notice has been given, or the public announcement thereof has been made, commence a new time period (or extend any time period) for the giving of a stockholder’s notice as described above.

(d) A person shall not be eligible for election or as a director at the special meeting unless the person is nominated either in accordance with clause (i) or clause (ii) of Section 6(c). Except as otherwise required by applicable law, the chairperson of the special meeting shall have the power and duty to determine whether a nomination was made in accordance with the procedures set forth in these Bylaws and, if any proposed nomination or business is not in compliance with these Bylaws, or if the Proponent does not act in accordance with the representations in Sections 5(b)(iv)(D) and 5(b)(iv)(E), to declare that such nomination shall not be presented for stockholder action at the meeting and shall be disregarded, notwithstanding that proxies in respect of such nomination may have been solicited or received. Notwithstanding the foregoing provisions of this Section 6, unless otherwise required by applicable law, if the stockholder (or a qualified representative of the stockholder (meeting the requirements specified in Section 5(e)) does not appear at the special meeting of stockholders of the Corporation to present a nomination, such nomination shall be disregarded, notwithstanding that proxies in respect of such vote may have been received by the Corporation.

(e) Notwithstanding the foregoing provisions of this Section 6, a stockholder must also comply with all applicable requirements of the 1934 Act and the rules and regulations promulgated thereunder with respect to the matters set forth in this Section 6. *provided, however*, that, to the fullest extent not prohibited by applicable law, any references in these Bylaws to the 1934 Act or the rules and regulations promulgated thereunder are not intended to and shall not limit the requirements applicable to proposals and/or nominations for the election to the Board of Directors to be considered pursuant to Section 6(c) of these Bylaws.

**Section 7. Notice of Meetings.** Except as otherwise provided by applicable law, the Certificate of Incorporation or these Bylaws, notice in writing or by electronic transmission, of each meeting of stockholders shall be given not fewer than ten (10) nor more than sixty (60) days before the date of the meeting to each stockholder entitled to vote at such meeting. Such notice shall be given in the manner provided in Section 232 of the DGCL and shall specify the place, if any, date and hour, in the case of special meetings, the purpose or purposes of the meeting, the record date for determining the stockholders entitled to vote at the meeting, if such record date is different from the record date for determining the stockholders entitled to notice of the meeting, and the means of remote communications, if any, by which stockholders and proxy holders may be deemed to be present in person and vote at any such meeting. Notice of the date, time, place, if any, and purpose of any meeting of stockholders (to the extent required) may be waived in writing, signed by the person entitled to notice thereof, or by electronic transmission by such person, either before or after such meeting, and will be waived by any stockholder by such stockholder's attendance thereat in person, by remote communication, if applicable, or by proxy, except when the stockholder attends a meeting for the express purpose of objecting, at the beginning of the meeting, to the transaction of any business because the meeting is not lawfully called or convened. Any stockholder so waiving notice of such meeting shall be bound by the proceedings of any such meeting in all respects as if due notice thereof had been given.

**Section 8. Quorum.** At all meetings of stockholders, except where otherwise provided by statute or by the Certificate of Incorporation, or by these Bylaws, the presence, in person, by remote communication, if applicable, or by proxy duly authorized, of the holders of a majority of the voting power of the outstanding shares of stock entitled to vote at the meeting shall constitute a quorum for the transaction of business. In the absence of a quorum, any meeting of stockholders may be adjourned, from time to time, either by the chairperson of the meeting or by vote of the holders of a majority of the voting power of the shares represented thereat and entitled to vote thereon, but no other business shall be transacted at such meeting.

The stockholders present at a duly called or convened meeting, at which a quorum is present, may continue to transact business until adjournment, notwithstanding the withdrawal of enough stockholders to leave less than a quorum. Except as otherwise provided by statute or by applicable stock exchange rules, or by the Certificate of Incorporation or these Bylaws, in all matters other than the election of directors, the affirmative vote of the majority of voting power of the shares present in person, by remote communication, if applicable, or represented by proxy duly authorized at the meeting and entitled to vote generally on the subject matter shall be the act of the stockholders. Except as otherwise provided by statute or by applicable stock exchange rules, the Certificate of Incorporation or these Bylaws, directors shall be elected by a plurality of the votes cast of the shares present in person, by remote communication, if applicable, or represented by proxy duly authorized at the meeting and entitled to vote generally on the election of directors. Where a separate vote by a class or classes or series is required, except where otherwise provided by the statute, or by applicable stock exchange rules, or by the Certificate of Incorporation or these Bylaws, a majority of the voting power of the outstanding shares of such class or classes or series, present in person, by remote communication, if applicable, or represented by proxy duly authorized, shall constitute a quorum entitled to take action with respect to that vote on that matter. Except where otherwise provided by statute or by applicable stock exchange rules or by the Certificate of Incorporation or these Bylaws, the affirmative vote of the holders of a majority (plurality, in the case of the election of directors) of voting power of such class or classes or series present in person, by remote communication, if applicable, or represented by proxy duly authorized at the meeting shall be the act of such class or classes or series.

**Section 9. Adjournment and Notice of Adjourned Meetings .** Any meeting of stockholders, whether annual or special, may be adjourned from time to time either by the chairperson of the meeting or by the vote of the holders of a majority of the voting power of the shares present in person, by remote communication, if applicable, or represented by proxy duly authorized at the meeting and entitled to vote thereon. When a meeting is adjourned to another time or place, if any (including an adjournment taken to address a technical failure to convene or continue a meeting using remote communication), notice need not be given of the adjourned meeting if the time and place, if any, and means of remote communications, if any, by which stockholders and proxy holders may be deemed to be present in person and vote at such adjourned meeting are announced at the meeting at which the adjournment is taken or are (i) displayed, during the time scheduled for the meeting, on the same electronic network used to enable stockholders and proxy holders to participate in the meeting by means of remote communication or (ii) set forth in the notice of meeting given in accordance with Section 7. At the adjourned meeting, the Corporation may transact any business that might have been transacted at the original meeting. If the adjournment is for more than thirty (30) days or if after the adjournment a new record date is fixed for the adjourned meeting, a notice of the adjourned meeting shall be given to each stockholder of record entitled to vote at the meeting. If after the adjournment a new record date for determination of stockholders entitled to vote is fixed for the adjourned meeting, the Board of Directors shall fix as the record date for determining stockholders entitled to notice of such adjourned meeting the same or an earlier date as that fixed for determination of stockholders entitled to vote at the adjourned meeting, and shall give notice of the adjourned meeting to each stockholder of record as of the record date so fixed for notice of such adjourned meeting.

**Section 10. Voting Rights.** For the purpose of determining those stockholders entitled to vote at any meeting of the stockholders or adjournment thereof, except as otherwise provided by applicable law, only persons in whose names shares stand on the stock records of the Corporation on the record date, as provided in Section 12 of these Bylaws, shall be entitled to vote at any meeting of stockholders. Every person entitled to vote shall have the right to do so either in person, by remote communication, if applicable, or by an agent or agents authorized by a proxy granted in accordance with Delaware law. An agent so appointed need not be a stockholder. No proxy shall be voted or acted upon after three (3) years from its date of creation unless the proxy provides for a longer period. A proxy shall be irrevocable if it states that it is irrevocable and if, and only as long as, it is coupled with an interest sufficient in law to support an irrevocable power. A stockholder may revoke any proxy which is not irrevocable by attending the meeting and voting in person or by delivering to the Secretary of the corporation a revocation of the proxy or a new proxy bearing a later date. Voting at meetings of stockholders need not be by written ballot.

**Section 11. Joint Owners of Stock.** If shares or other securities having voting power stand of record in the names of two (2) or more persons, whether fiduciaries, members of a partnership, joint tenants, tenants in common, tenants by the entirety, or otherwise, or if two (2) or more persons have the same fiduciary relationship respecting the same shares, unless the Secretary of the Corporation is given written notice to the contrary and is furnished with a copy of the instrument or order appointing them or creating the relationship wherein it is so provided, their acts with respect to voting shall have the following effect: (a) if only one (1) votes, his or her act binds all; (b) if more than one (1) votes, the act of the majority so voting binds all; (c) if more than one (1) votes, but the vote is evenly split on any particular matter, each faction may vote the securities in question proportionally, or may apply to the Delaware Court of Chancery for relief as provided in Section 217(b) of the DGCL. If the instrument filed with the Secretary of the Corporation shows that any such tenancy is held in unequal interests, a majority or even-split for the purpose of subsection (c) of Section 11 shall be a majority or even-split in interest.

**Section 12. List of Stockholders.** The Secretary of the Corporation shall prepare, at least ten (10) days before every meeting of stockholders, a complete list of the stockholders of record entitled to vote at said meeting, arranged in alphabetical order, showing the address of each stockholder and the number and class of shares registered in the name of each stockholder. Such list shall be open to the examination of any stockholder, for any purpose germane to the meeting, (a) on a reasonably accessible electronic network, provided that the information required to gain access to such list is provided with the notice of the meeting, or (b) during ordinary business hours, at the principal place of business of the Corporation. In the event that the Corporation determines to make the list available on an electronic network, the Corporation may take reasonable steps to ensure that such information is available only to stockholders of the Corporation.

**Section 13. Action Without Meeting.** No action shall be taken by the stockholders except at an annual or special meeting of stockholders called in accordance with these Bylaws, and no action of the stockholders of the Corporation may be taken by the stockholders by written consent or by electronic transmission.

**Section 14. Organization.**

(a) At every meeting of stockholders, a person designated by the Board of Directors shall act as chairperson of the meeting of stockholders. If no chairperson of the meeting of stockholders is so designated, then the Chairperson of the Board of Directors, or, if a Chairperson has not been appointed, is absent or refuses to act, the Chief Executive Officer, or if no Chief Executive Officer is then serving, is absent or refuses to act, the President, or, if the President is absent or refuses to act, a chairperson of the meeting chosen by the holders of a majority of the voting power of the stockholders entitled to vote, present in person or by proxy duly authorized, shall act as chairperson of the meeting of stockholders. The Secretary of the Corporation, or, in his or her absence, an Assistant Secretary of the Corporation or other officer, director or other person directed to do so by the chairperson of the meeting, shall act as secretary of the meeting.

(b) The Board of Directors of the Corporation shall be entitled to make such rules or regulations for the conduct of meetings of stockholders as it shall deem necessary, appropriate or convenient. Subject to such rules and regulations of the Board of Directors, if any, the chairperson of the meeting shall have the right and authority to convene and (for any or no reason) recess and/or adjourn the meeting, to prescribe such rules, regulations and procedures and to do all such acts as, in the judgment of such chairperson, are necessary, appropriate or convenient for the proper conduct of the meeting, including, without limitation, establishing an agenda or order of business for the meeting, rules and procedures for maintaining order at the meeting and the safety of those present, limitations on participation in such meeting to stockholders of record of the Corporation and their duly authorized and constituted proxies and such other persons as the chairperson shall permit, restrictions on entry to the meeting after the time fixed for the commencement thereof, limitations on the time allotted to questions or comments by participants and regulation of the opening and closing of the polls for balloting on matters which are to be voted on by ballot. The date and time of the opening and closing of the polls for each matter upon which the stockholders will vote at the meeting shall be announced at the meeting. Unless and to the extent determined by the Board of Directors or the chairperson of the meeting, meetings of stockholders shall not be required to be held in accordance with rules of parliamentary procedure.

(c) The Corporation may and shall, if required by applicable law, in advance of any meeting of stockholders, appoint one or more inspectors to act at the meeting and make a written report thereof. The Corporation may designate one or more persons as alternate inspectors to replace any inspector who fails to act. If no inspector or alternate is able to act at a meeting of stockholders, the chairperson of the meeting shall appoint one or more inspectors to act at the meeting. Each inspector, before entering upon the discharge of the duties of inspector, shall take and sign an oath faithfully to execute the duties of inspector with strict impartiality and according to the best of such inspector's ability. The inspectors shall: (1) ascertain the number of shares outstanding and the voting power of each; (2) determine the shares represented at a meeting and the validity of proxies and ballots; (3) count all votes and ballots; (4) determine and retain for a reasonable period a record of the disposition of any challenges made to any determination by the inspectors; and (5) certify their determination of the number of shares represented at the meeting, and their count of all votes and ballots. The inspectors may appoint or retain other persons or entities to assist the inspectors in the performance of the duties of the inspectors. In determining the validity and counting of proxies and ballots, the inspectors shall be limited to an examination of the proxies, any envelopes submitted with those proxies, any information provided in accordance with Sections 211(e) or 212(c)(2) of the DGCL, or any information provided pursuant to Sections 211(a)(2)b.(i) or (iii) of the DGCL, ballots and the regular books and records of the Corporation, except that the inspectors may consider other reliable information for the limited purpose of reconciling proxies and ballots submitted by or on behalf of banks, brokers, their nominees or similar persons which represent more votes than the holder of a proxy is authorized by the record owner to cast or more votes than the stockholder holds of record. If the inspectors consider other reliable information for the limited purpose permitted herein, the inspectors at the time they make their certification pursuant to Section 231(b)(5) of the DGCL shall specify the precise information considered by them including the person or

persons from whom they obtained the information, when the information was obtained, the means by which the information was obtained and the basis for the inspectors' belief that such information is accurate and reliable.

## ARTICLE IV

### DIRECTORS

**Section 15. Number and Term of Office.** The authorized number of directors of the Corporation shall be fixed exclusively by resolution of the Board of Directors in accordance with the Certificate of Incorporation. Directors need not be stockholders unless so required by the Certificate of Incorporation. If for any cause, the directors shall not have been elected at an annual meeting, they may be elected as soon thereafter as convenient at a special meeting of the stockholders called for that purpose in the manner provided in these Bylaws.

**Section 16. Powers.** The business and affairs of the Corporation shall be managed by or under the direction of the Board of Directors, except as may be otherwise provided by the DGCL or by the Certificate of Incorporation.

**Section 17. Classes of Directors.** Subject to the rights of the holders of any series of Preferred Stock to elect additional directors under specified circumstances, following the adoption of these Bylaws, the directors shall be divided into three classes designated as Class I, Class II and Class III, respectively. Each class shall consist, as nearly as may be possible, of one-third of the total number of directors constituting the entire Board of Directors. The Board of Directors is authorized to assign members of the Board of Directors already in office to such classes at the time the classification becomes effective. At the first annual meeting of stockholders following the adoption of these Bylaws, the term of office of the Class I directors shall expire and Class I directors shall be elected for a full term of three years. At the second annual meeting of stockholders following the adoption of these Bylaws, the term of office of the Class II directors shall expire and Class II directors shall be elected for a full term of three years. At the third annual meeting of stockholders following the adoption of these Bylaws, the term of office of the Class III directors shall expire and Class III directors shall be elected for a full term of three years. At each succeeding annual meeting of stockholders, directors shall be elected for a full term of three years to succeed the directors of the class whose terms expire at such annual meeting. If the number of directors is changed, any increase or decrease shall be apportioned among the classes so as to maintain the number of directors in each class as nearly equal as possible, and any additional director of any class elected to fill a vacancy resulting from an increase in such class shall hold office for a term that shall coincide with the remaining term of that class, but in no case will a decrease in the number of directors shorten the term of any incumbent director.

Notwithstanding the foregoing provisions of this Section 17, each director shall serve until his or her successor is duly elected and qualified or until his or her earlier death, resignation or removal.

**Section 18. Vacancies.** Unless otherwise provided in the Certificate of Incorporation, and subject to the rights of the holders of any series of preferred stock or otherwise provided by applicable law, any vacancies on the Board of Directors resulting from death, resignation,

disqualification, removal or other causes and any newly created directorships resulting from any increase in the number of directors shall, unless the Board of Directors determines by resolution that any such vacancies or newly created directorships shall be filled by stockholders, be filled only by the affirmative vote of a majority of the directors then in office, even though less than a quorum of the Board of Directors, or by a sole remaining director, and not by the stockholders, provided, however, that whenever the holders of any class or classes of stock or series thereof are entitled to elect one or more directors by the provisions of the Certificate of Incorporation, vacancies and newly created directorships of such class or classes or series shall, unless the Board of Directors determines by resolution that any such vacancies or newly created directorships shall be filled by stockholders, be filled by a majority of the directors elected by such class or classes or series thereof then in office, or by a sole remaining director so elected, and not by the stockholders. Any director elected in accordance with the preceding sentence shall hold office for the remainder of the full term of the director for which the vacancy was created or occurred and until such director's successor shall have been elected and qualified. A vacancy in the Board of Directors shall be deemed to exist under this Bylaw in the case of the death, removal or resignation of any director.

**Section 19. Resignation.** Any director may resign at any time by delivering his or her notice in writing or by electronic transmission to the Secretary of the Corporation, such resignation to specify whether it will be effective at a particular time. If no such specification is made, the resignation shall be deemed effective at the time of delivery of the resignation to the Secretary of the Corporation. When one or more directors shall resign from the Board of Directors, effective at a future date, a majority of the directors then in office, including those who have so resigned, shall have power to fill such vacancy or vacancies, the vote thereon to take effect when such resignation or resignations shall become effective, and each director so chosen shall hold office for the unexpired portion of the term of the director whose place shall be vacated and until his or her successor shall have been duly elected and qualified or until his or her earlier death, resignation or removal.

**Section 20. Removal.** Subject to the rights of the holders of any series of Preferred Stock, any individual director or directors may be removed only with cause by the affirmative vote of the holders of at least a majority of the voting power of all then outstanding shares of capital stock of the Corporation entitled to vote generally at an election of directors, voting together as a single class.

**Section 21. Meetings.**

**(a) Regular Meetings.** Unless otherwise restricted by the Certificate of Incorporation, regular meetings of the Board of Directors may be held at any time or date and at any place within or without the State of Delaware which has been designated by the Board of Directors and communicated among all directors, either orally or in writing, by telephone, including a voice-messaging system or other system designed to record and communicate messages, or by electronic mail or other electronic means. No further notice shall be required for regular meetings of the Board of Directors.

**(b) Special Meetings.** Unless otherwise restricted by the Certificate of Incorporation, special meetings of the Board of Directors may be held at any date, time and place within or without the State of Delaware whenever called by the Chairperson of the Board, the Chief Executive Officer or a majority of the total number of authorized directors.

(c) **Meetings by Electronic Communications Equipment.** Any member of the Board of Directors, or of any committee thereof, may participate in a meeting by means of conference telephone or other communications equipment by means of which all persons participating in the meeting can hear each other, and participation in a meeting by such means shall constitute presence in person at such meeting.

(d) **Notice of Special Meetings.** Notice of the time and place of all special meetings of the Board of Directors shall be given orally or in writing, by telephone, including a voice messaging system or other system or technology designed to record and communicate messages, or by electronic mail or other electronic means, during normal business hours, at least twenty-four (24) hours before the date and time of the meeting. If notice is sent by U.S. mail, it shall be sent by first class mail, postage prepaid, at least three (3) days before the date of the meeting. Notice of any special meeting may be waived in writing, or by electronic transmission, at any time before or after the meeting and will be waived by any director by attendance thereat, except when the director attends the meeting for the express purpose of objecting, at the beginning of the meeting, to the transaction of any business because the meeting is not lawfully called or convened.

(e) **Waiver of Notice.** The transaction of all business at any meeting of the Board of Directors, or any committee thereof, however called or noticed, or wherever held, shall be as valid as though it had been transacted at a meeting duly held after regular call and notice, if a quorum be present and if, either before or after the meeting, each of the directors not present who did not receive notice shall sign a written waiver of notice or shall waive notice by electronic transmission. All such waivers shall be filed with the corporate records or made a part of the minutes of the meeting. Notice of any meeting will be waived by any director by attendance thereat, except when the director attends the meeting for the express purpose of objecting, at the beginning of the meeting, to the transaction of any business because the meeting is not lawfully called or convened.

#### **Section 22. Quorum and Voting.**

(a) Unless the Certificate of Incorporation requires a greater number, and except with respect to questions related to indemnification arising under Section 45 for which a quorum shall be one-third of the exact number of directors fixed from time to time by the Board of Directors in accordance with the Certificate of Incorporation, a quorum of the Board of Directors shall consist of a majority of the total number of directors then serving on the Board of Directors or, if greater, one-third of the exact number of directors fixed from time to time by the Board of Directors in accordance with the Certificate of Incorporation; *provided, however*, at any meeting whether a quorum be present or otherwise, a majority of the directors present may adjourn from time to time until the time fixed for the next regular meeting of the Board of Directors, without notice other than by announcement at the meeting.

(b) At each meeting of the Board of Directors at which a quorum is present, all questions and business shall be determined by the affirmative vote of a majority of the directors present, unless a different vote be required by law, the Certificate of Incorporation or these Bylaws.

**Section 23. Action Without Meeting.** Unless otherwise restricted by the Certificate of Incorporation or these Bylaws, any action required or permitted to be taken at any meeting of the Board of Directors or of any committee thereof may be taken without a meeting, if all members of the Board of Directors or committee, as the case may be, consent thereto in writing or by electronic transmission, and such writing or writings or transmission or transmissions are filed with the minutes of proceedings of the Board of Directors or committee. Such filing shall be in paper form if the minutes are maintained in paper form and shall be in electronic form if the minutes are maintained in electronic form.

**Section 24. Fees and Compensation.** Directors shall be entitled to such compensation for their services as may be approved by the Board of Directors or a committee thereof to which the Board of Directors has delegated such responsibility and authority, including, if so approved, by resolution of the Board of Directors or a committee thereof to which the Board of Directors has delegated such responsibility and authority, a fixed sum and expenses of attendance, if any, for attendance at each regular or special meeting of the Board of Directors and at any meeting of a committee of the Board of Directors, as well as reimbursement for other reasonable expenses incurred with respect to duties as a member of the Board of Directors or any committee thereof. Nothing herein contained shall be construed to preclude any director from serving the Corporation in any other capacity as an officer, agent, employee, or otherwise and receiving compensation therefor.

**Section 25. Committees.**

**(a) Executive Committee.** The Board of Directors may designate an Executive Committee to consist of one (1) or more members of the Board of Directors. The Executive Committee, to the extent permitted by law and provided in the resolution of the Board of Directors shall have and may exercise all the powers and authority of the Board of Directors in the management of the business and affairs of the Corporation, and may authorize the seal of the Corporation to be affixed to all papers which may require it; but no such committee shall have the power or authority in reference to (i) approving or adopting, or recommending to the stockholders, any action or matter (other than the election or removal of directors) expressly required by the DGCL to be submitted to stockholders for approval, or (ii) adopting, amending or repealing any Bylaw of the Corporation.

**(b) Other Committees.** The Board of Directors may, from time to time, designate such other committees as may be permitted by law. Such other committees designated by the Board of Directors shall consist of one (1) or more members of the Board of Directors and shall have such powers and perform such duties as may be prescribed by the resolution or resolutions creating such committees, but in no event shall any such committee have the power or authority in reference to (i) approving or adopting, or recommending to the stockholders, any action or matter (other than the election or removal of directors) expressly required by the DGCL to be submitted to stockholders for approval, or (ii) adopting, amending or repealing any Bylaw of the Corporation.

**(c) Term.** The Board of Directors, subject to any requirements of any outstanding series of preferred stock and the provisions of subsections (a) or (b) of this Section 25, may at any time increase or decrease the number of members of a committee or terminate the existence of a committee. The membership of a committee member shall terminate on the date of his or her death or voluntary resignation from the committee or from the Board of Directors. The Board of Directors may at any time for any reason remove any individual committee member and the Board of Directors may fill any committee vacancy created by death, resignation, removal or increase in the number of members of the committee. The Board of Directors may designate one or more directors as alternate members of any committee, who may replace any absent or disqualified member at any meeting of the committee, and, in addition, in the absence or disqualification of any member of a committee, the member or members thereof present at any meeting and not disqualified from voting, whether or not he or she or they constitute a quorum, may unanimously appoint another member of the Board of Directors to act at the meeting in the place of any such absent or disqualified member.

**(d) Meetings.** Unless the Board of Directors shall otherwise provide, regular meetings of the Executive Committee or any other committee designated pursuant to this Section 25 shall be held at such times and places as are determined by the Board of Directors, or by any such committee,

and when notice thereof has been given to each member of such committee, no further notice of such regular meetings need be given thereafter. Special meetings of any such committee may be held at any place which has been determined from time to time by such committee, and may be called by any director who is a member of such committee, upon notice to the members of such committee of the time and place of such special meeting given in the manner provided for the giving of notice to members of the Board of Directors of the time and place of special meetings of the Board of Directors. Notice of any regular or special meeting of any committee may be waived in writing or by electronic transmission at any time before or after the meeting and will be waived by any director by attendance thereat, except when the director attends such regular or special meeting for the express purpose of objecting, at the beginning of the meeting, to the transaction of any business because the meeting is not lawfully called or convened. Unless otherwise provided by the Board of Directors in the resolutions authorizing the creation of the committee, a majority of the authorized number of members of any such committee shall constitute a quorum for the transaction of business, and the act of a majority of those members of the committee present at any meeting at which a quorum is present shall be the act of such committee. Unless the Board of Directors shall otherwise provide, each committee shall conduct its business in the same manner as the Board of Directors conducts its business pursuant to Article IV of these Bylaws.

**Section 26. Duties of Chairperson of the Board of Directors and Lead Independent Director.**

(a) The Chairperson of the Board of Directors, if appointed and when present, shall preside at all meetings of the stockholders and the Board of Directors. The Chairperson of the Board of Directors shall perform other duties commonly incident to the office and shall also perform such other duties and have such other powers, as the Board of Directors shall designate from time to time.

(b) The Chairperson of the Board of Directors, or if the Chairperson is not an independent director, one of the independent directors, may be designated by the Board of Directors as lead independent director to serve until replaced by the Board of Directors (“**Lead Independent Director**”). The Lead Independent Director will: preside over meetings of the independent directors, preside over portions of meetings of the Board of Directors at which the evaluation or compensation of the Chief Executive Officer is presented or discussed; coordinate the activities of the other independent directors; and perform such other duties as may be established or delegated by the Board of Directors.

**Section 27. Organization.** At every meeting of the directors, the Chairperson of the Board of Directors, or, if a Chairperson has not been appointed or is absent, the Lead Independent Director, or if the Lead Independent Director has not been appointed or is absent, the Chief Executive Officer (if a director), or, if the Chief Executive Officer is absent, the President (if a director), or if the President is absent, the most senior Vice President (if a director), or, in the absence of any such person, a chairperson of the meeting chosen by a majority of the directors present, shall preside over the meeting. The Secretary of the Corporation, or in his or her absence, any Assistant Secretary of the Corporation or other officer, director or other person directed to do so by the person presiding over the meeting, shall act as secretary of the meeting.

**Section 28. Interested Directors.** No contract or transaction between the Corporation and one or more of its directors or officers, or between the Corporation and any other corporation, partnership, association or other organization in which one or more of the Corporation’s directors or officers are directors or officers or have a financial interest, shall be void or voidable solely for this reason, or solely because the director or officer is present at or participates in the meeting of the Board or committee thereof that authorizes the contract or transaction, or solely because any such director’s or officer’s vote is counted for such purpose if: (a) the material facts as to the director’s or officer’s relationship or interest

and as to the contract or transaction are disclosed or are known to the Board or the committee and the Board or committee in good faith authorizes the contract or transaction by the affirmative vote of a majority of the disinterested directors, even though the disinterested directors be less than a quorum; (b) the material facts as to the director's or officer's relationship or interest and as to the contract or transaction are disclosed or are known to the stockholders entitled to vote thereon and the contract or transaction is specifically approved in good faith by vote of the stockholders; or (c) the contract or transaction is fair as to the Corporation as of the time it is authorized, approved or ratified by the Board, a committee thereof or the stockholders. Common or interested directors may be counted in determining the presence of a quorum at a meeting of the Board or of a committee that authorizes the contract or transaction.

## ARTICLE V

### OFFICERS

**Section 29. Officers Designated.** The officers of the Corporation may include, if and when designated by the Board of Directors, the Chief Executive Officer, the President, one or more Vice Presidents, the Secretary, the Chief Financial Officer and the Treasurer. The Board of Directors may also appoint one or more Assistant Secretaries and Assistant Treasurers and such other officers and agents with such powers and duties as it shall deem necessary. The Board of Directors may assign such additional titles to one or more of the officers as it shall deem appropriate. Any one person may hold any number of offices of the Corporation at any one time unless specifically prohibited therefrom by law. The salaries and other compensation of the officers of the Corporation shall be fixed by or in the manner designated by the Board of Directors or by a committee thereof to which the Board of Directors has delegated such responsibility.

#### **Section 30. Tenure and Duties of Officers.**

**(a) General.** All officers shall hold office at the pleasure of the Board of Directors and until their successors shall have been duly elected and qualified, unless sooner removed. Any officer elected or appointed by the Board of Directors may be removed at any time by the Board of Directors. If the office of any officer becomes vacant for any reason, the vacancy may be filled by the Board of Directors or by a committee thereof to which the Board of Directors has delegated such responsibility or, if so authorized by the Board of Directors, by the Chief Executive Officer or another officer of the corporation.

**(b) Duties of Chief Executive Officer.** The Chief Executive Officer shall preside at all meetings of the stockholders and at all meetings of the Board of Directors (if a director), unless the Chairperson of the Board of Directors or the Lead Independent Director has been appointed and is present. Unless an officer has been appointed Chief Executive Officer of the Corporation, the President shall be the chief executive officer of the Corporation and shall, subject to the supervision, direction and control of the Board of Directors, have general powers and duties of supervision, direction, management and control of the business and officers of the Corporation as are customarily associated with the position of Chief Executive Officer. To the extent that a Chief Executive Officer has been appointed and no President has been appointed, all references in these Bylaws to the President shall be deemed references to the Chief Executive Officer. The Chief Executive Officer shall perform other duties commonly incident to the office and shall also perform such other duties and have such other powers, as the Board of Directors shall designate from time to time.

**(c) Duties of President.** The President shall preside at all meetings of the stockholders and at all meetings of the Board of Directors (if a director), unless the Chairperson of the

Board of Directors, the Lead Independent Director or the Chief Executive Officer has been appointed and is present. Unless another officer has been appointed Chief Executive Officer of the Corporation, the President shall be the chief executive officer of the Corporation and shall, subject to the supervision, direction and control of the Board of Directors, have general powers and duties of supervision, direction, management and control of the business and officers of the Corporation as are customarily associated with the position of President. The President shall perform other duties commonly incident to the office and shall also perform such other duties and have such other powers, as the Board of Directors (or the Chief Executive Officer, if the Chief Executive Officer and President are not the same person and the Board of Directors has delegated the designation of the President's duties to the Chief Executive Officer) shall designate from time to time.

**(d) Duties of Vice Presidents.** A Vice President may assume and perform the duties of the President in the absence or disability of the President or whenever the office of President is vacant. A Vice President shall perform other duties commonly incident to their office and shall also perform such other duties and have such other powers as the Board of Directors or the Chief Executive Officer, or, if the Chief Executive Officer has not been appointed or is absent, the President shall designate from time to time.

**(e) Duties of Secretary.** The Secretary of the Corporation shall attend all meetings of the stockholders and of the Board of Directors and shall record all acts and proceedings thereof in the minute book of the Corporation. The Secretary of the Corporation shall give notice in conformity with these Bylaws of all meetings of the stockholders and of all meetings of the Board of Directors and any committee thereof requiring notice. The Secretary of the Corporation shall perform all other duties provided for in these Bylaws and other duties commonly incident to the office and shall also perform such other duties and have such other powers, as the Board of Directors or the Chief Executive Officer, or if no Chief Executive Officer is then serving, the President shall designate from time to time. The Chief Executive Officer, or if no Chief Executive Officer is then serving, the President may direct any Assistant Secretary of the Corporation or other officer to assume and perform the duties of the Secretary in the absence or disability of the Secretary, and each Assistant Secretary of the Corporation shall perform other duties commonly incident to the office and shall also perform such other duties and have such other powers as the Board of Directors or the Chief Executive Officer, or if no Chief Executive Officer is then serving, the President shall designate from time to time.

**(f) Duties of Chief Financial Officer.** The Chief Financial Officer shall keep or cause to be kept the books of account of the Corporation in a thorough and proper manner and shall render statements of the financial affairs of the Corporation in such form and as often as required by the Board of Directors or the Chief Executive Officer, or if no Chief Executive Officer is then serving, the President. The Chief Financial Officer, subject to the order of the Board of Directors, shall have the custody of all funds and securities of the Corporation. The Chief Financial Officer shall perform other duties commonly incident to the office and shall also perform such other duties and have such other powers as the Board of Directors or the Chief Executive Officer, or if no Chief Executive Officer is then serving, the President shall designate from time to time. To the extent that a Chief Financial Officer has been appointed and no Treasurer has been appointed, all references in these Bylaws to the Treasurer shall be deemed references to the Chief Financial Officer. The President may direct the Treasurer, if any, or any Assistant Treasurer, or the controller or any assistant controller to assume and perform the duties of the Chief Financial Officer in the absence or disability of the Chief Financial Officer, and each Treasurer and Assistant Treasurer and each controller and assistant controller shall perform other duties commonly incident to the office and shall also perform such other duties and have such other powers as the Board of Directors or the Chief Executive Officer, or if no Chief Executive Officer is then serving, the President shall designate from time to time.

(g) **Duties of Treasurer.** Unless another officer has been appointed Chief Financial Officer of the Corporation, the Treasurer shall be the chief financial officer of the Corporation and shall keep or cause to be kept the books of account of the Corporation in a thorough and proper manner and shall render statements of the financial affairs of the Corporation in such form and as often as required by the Board of Directors or the Chief Executive Officer, or if no Chief Executive Officer is then serving, the President, and, subject to the order of the Board of Directors, shall have the custody of all funds and securities of the Corporation. The Treasurer shall perform other duties commonly incident to the office and shall also perform such other duties and have such other powers as the Board of Directors or the Chief Executive Officer, or if no Chief Executive Officer is then serving, the President and the Chief Financial Officer (if not Treasurer) shall designate from time to time.

**Section 31. Delegation of Authority.** The Board of Directors may from time to time delegate the powers or duties of any officer to any other officer or agent, notwithstanding any provision hereof.

**Section 32. Resignations.** Any officer may resign at any time by giving notice in writing or by electronic transmission to the Board of Directors or to the Chief Executive Officer, or if no Chief Executive Officer is then serving, the President or to the Secretary of the Corporation. Any such resignation shall be effective when received by the person or persons to whom such notice is given, unless a later time is specified therein, in which event the resignation shall become effective at such later time. Unless otherwise specified in such notice, the acceptance of any such resignation shall not be necessary to make it effective. Any resignation shall be without prejudice to the rights, if any, of the Corporation under any contract with the resigning officer.

**Section 33. Removal.** Any officer elected or appointed by the Board of Directors may be removed from office at any time, either with or without cause, by the affirmative vote of a majority of the directors in office at the time, or by the unanimous written consent of the directors in office at the time, or by any committee or by the Chief Executive Officer or by other superior officers upon whom such power of removal may have been conferred by the Board of Directors.

## ARTICLE VI

### EXECUTION OF CORPORATE INSTRUMENTS AND VOTING OF SECURITIES OWNED BY THE CORPORATION

**Section 34. Execution of Corporate Instruments.** The Board of Directors may, in its discretion, determine the method and designate the signatory officer or officers, or other person or persons, to execute on behalf of the Corporation any corporate instrument or document, or to sign on behalf of the Corporation the corporate name without limitation, or to enter into contracts on behalf of the Corporation, except where otherwise provided by law or these Bylaws, and such execution or signature shall be binding upon the Corporation.

All checks and drafts drawn on banks or other depositaries on funds to the credit of the Corporation or in special accounts of the Corporation shall be signed by such person or persons as the Board of Directors shall authorize so to do.

Unless otherwise specifically determined by the Board of Directors or otherwise required by applicable law, the execution, signing or endorsement of any corporate instrument or document may be effected manually, by facsimile or (to the extent permitted by applicable law and subject to such policies and procedures as the corporation may have in effect from time to time) by electronic signature.

Unless authorized or ratified by the Board of Directors or within the agency power of an officer, no officer, agent or employee shall have any power or authority to bind the Corporation by any contract or engagement or to pledge its credit or to render it liable for any purpose or for any amount.

**Section 35. Voting of Securities Owned By the Corporation.** All stock and other securities of other Corporations owned or held by the Corporation for itself, or for other parties in any capacity, shall be voted, and all proxies with respect thereto shall be executed, by the person authorized so to do by resolution of the Board of Directors, or, in the absence of such authorization, by the Chairperson of the Board of Directors, the Chief Executive Officer, the President, or any Vice President.

## ARTICLE VII

### SHARES OF STOCK

**Section 36. Form and Execution of Certificates.** The shares of the Corporation shall be represented by certificates, or shall be uncertificated if so provided by resolution or resolutions of the Board of Directors. Certificates for the shares of stock, if any, shall be in such form as is consistent with the Certificate of Incorporation and applicable law. Every holder of stock in the Corporation represented by certificate shall be entitled to have a certificate signed by or in the name of the Corporation by any two authorized officers of the Corporation, including but not limited to, the Chief Executive Officer, the President, the Chief Financial Officer, any Vice President, the Treasurer or Assistant Treasurer or the Secretary or Assistant Secretary, certifying the number, and the class or series, of shares owned by such holder in the Corporation. Any or all of the signatures on the certificate may be facsimiles. In case any officer, transfer agent, or registrar who has signed or whose facsimile signature has been placed upon a certificate shall have ceased to be such officer, transfer agent, or registrar before such certificate is issued, it may be issued with the same effect as if he were such officer, transfer agent, or registrar at the date of issue.

**Section 37. Lost Certificates.** A new certificate or certificates shall be issued in place of any certificate or certificates theretofore issued by the Corporation alleged to have been lost, stolen, or destroyed, upon the making of an affidavit of that fact by the person claiming the certificate of stock to be lost, stolen, or destroyed. The Corporation may require, as a condition precedent to the issuance of a new certificate or certificates, the owner of such lost, stolen, or destroyed certificate or certificates, or the owner's legal representative, to agree to indemnify the Corporation in such manner as it shall require or to give the Corporation a surety bond in such form and amount as it may direct as indemnity against any claim that may be made against the Corporation with respect to the certificate alleged to have been lost, stolen, or destroyed.

**Section 38. Transfers.**

(a) Transfers of record of shares of stock of the Corporation shall be made only upon its books by the holders thereof, in person or by attorney duly authorized, and, in the case of stock represented by certificate, upon the surrender of a properly endorsed certificate or certificates for a like number of shares.

(b) The Corporation shall have power to enter into and perform any agreement with any number of stockholders of any one or more classes of stock of the Corporation to restrict the transfer of shares of stock of the Corporation of any one or more classes owned by such stockholders in any manner not prohibited by the DGCL.

**Section 39. Fixing Record Dates.**

(a) In order that the Corporation may determine the stockholders entitled to notice of or to vote at any meeting of stockholders or any adjournment thereof, the Board of Directors may fix a record date, which record date shall not precede the date upon which the resolution fixing the record date is adopted by the Board of Directors, and which record date shall, subject to applicable law, not be more than sixty (60) nor less than ten (10) days before the date of such meeting. If the Board of Directors so fixes a record date for determining the stockholders entitled to notice of any meeting of stockholders, such date shall also be the record date for determining the stockholders entitled to vote at such meeting, unless the Board of Directors determines, at the time it fixes the record date for determining the stockholders entitled to notice of such meeting, that a later date on or before the date of the meeting shall be the record date for determining the stockholders entitled to vote at such meeting. If no record date is fixed by the Board of Directors, the record date for determining stockholders entitled to notice of or to vote at a meeting of stockholders shall be at the close of business on the day next preceding the day on which notice is given, or if notice is waived, at the close of business on the day next preceding the day on which the meeting is held. A determination of stockholders of record entitled to notice of or to vote at a meeting of stockholders shall apply to any adjournment of the meeting; *provided, however*, that the Board of Directors may fix a new record date for the adjourned meeting in accordance with the provisions of this Section 39(a).

(b) In order that the Corporation may determine the stockholders entitled to receive payment of any dividend or other distribution or allotment of any rights or the stockholders entitled to exercise any rights in respect of any change, conversion or exchange of stock, or for the purpose of any other lawful action, the Board of Directors may fix, in advance, a record date, which record date shall not precede the date upon which the resolution fixing the record date is adopted, and which record date shall be not more than sixty (60) days prior to such action. If no record date is fixed, the record date for determining stockholders for any such purpose shall be at the close of business on the day on which the Board of Directors adopts the resolution relating thereto.

**Section 40. Registered Stockholders.** The Corporation shall be entitled to recognize the exclusive right of a person registered on its books as the owner of shares to receive dividends, and to vote as such owner, and shall not be bound to recognize any equitable or other claim to or interest in such share or shares on the part of any other person whether or not it shall have express or other notice thereof, except as otherwise provided by the laws of Delaware.

**Section 41. Additional Powers of the Board.** In addition to, and without limiting, the powers set forth in these Bylaws, the Board of Directors shall have power and authority to make all such rules and regulations as it shall deem expedient concerning the issue, transfer, and registration of certificates for shares of stock of the corporation, including the use of uncertificated shares of stock, subject to the provisions of the DGCL, other applicable law, the Certificate of Incorporation and these Bylaws. The Board of Directors may appoint and remove transfer agents and registrars of transfers, and may require all stock certificates to bear the signature of any such transfer agent and/or any such registrar of transfers.

## ARTICLE VIII

### OTHER SECURITIES OF THE CORPORATION

**Section 42. Execution of Other Securities.** All bonds, debentures and other corporate securities of the Corporation, other than stock certificates (covered in Section 36), may be signed by the Chief Executive Officer, the President or any Vice President, or such other person as may be authorized by the Board of Directors, and if such securities require it, the corporate seal may be impressed thereon or a facsimile of such seal may be imprinted thereon and attested by the signature of the Secretary of the Corporation or an Assistant Secretary of the Corporation, or the Chief Financial Officer or Treasurer or an

Assistant Treasurer; *provided, however*, that where any such bond, debenture or other corporate security shall be authenticated by the manual signature, or where permissible facsimile signature, of a trustee under an indenture pursuant to which such bond, debenture or other corporate security shall be issued, the signatures of the persons signing and attesting the corporate seal on such bond, debenture or other corporate security may be the imprinted facsimile of the signatures of such persons. Interest coupons appertaining to any such bond, debenture or other corporate security, authenticated by a trustee as aforesaid, shall be signed by the Treasurer or an Assistant Treasurer of the Corporation or such other person as may be authorized by the Board of Directors, or bear imprinted thereon the facsimile signature of such person. In case any officer who shall have signed or attested any bond, debenture or other corporate security, or whose facsimile signature shall appear thereon or on any such interest coupon, shall have ceased to be such officer before the bond, debenture or other corporate security so signed or attested shall have been delivered, such bond, debenture or other corporate security nevertheless may be adopted by the Corporation and issued and delivered as though the person who signed the same or whose facsimile signature shall have been used thereon had not ceased to be such officer of the Corporation.

## ARTICLE IX

### DIVIDENDS

**Section 43. Declaration of Dividends.** Dividends upon the capital stock of the Corporation, subject to the provisions of the Certificate of Incorporation and applicable law, if any, may be declared by the Board of Directors pursuant to law at any regular or special meeting. Dividends may be paid in cash, in property, or in shares of the capital stock, subject to the provisions of the Certificate of Incorporation and applicable law.

**Section 44. Dividend Reserve.** Before payment of any dividend, there may be set aside out of any funds of the Corporation available for dividends such sum or sums as the Board of Directors from time to time, in its absolute discretion, determines proper as a reserve or reserves to meet contingencies, or for equalizing dividends, or for repairing or maintaining any property of the Corporation, or for such other purpose or purposes as the Board of Directors shall determine to be conducive to the interests of the Corporation, and the Board of Directors may modify or abolish any such reserve in the manner in which it was created.

## ARTICLE X

### FISCAL YEAR

**Section 45. Fiscal Year.** The fiscal year of the Corporation shall be fixed by resolution of the Board of Directors.

## ARTICLE XI

### INDEMNIFICATION

**Section 46. Indemnification of Directors, Executive Officers, Other Officers, Employees and Other Agents.**

(a) **Directors and Executive Officers.** The Corporation shall indemnify its directors and executive officers (for the purposes of this Article XI, "*executive officers*" shall have the meaning defined in Rule 3b-7 promulgated under the 1934 Act) to the extent permitted by the DGCL or any other applicable law, who were or are made a party or are threatened to be made a party or are otherwise involved in a proceeding, by reason of the fact that he or she, or a person for whom he or she is the legal

representative, is or was a director or officer of the corporation, against all liability and loss suffered and expenses (including attorneys' fees) reasonably incurred by such person; *provided, however*, that the Corporation may modify the extent of such indemnification by individual contracts with its directors and executive officers, in which case such contract shall supersede and replace the provisions hereof; and, *provided, further*, that the Corporation shall not be required to indemnify any director or executive officer in connection with any proceeding (or part thereof) initiated by such person unless (i) such indemnification is expressly required to be made by applicable law, (ii) the proceeding was authorized by the Board of Directors of the Corporation, (iii) such indemnification is provided by the Corporation, in its sole discretion, pursuant to the powers vested in the Corporation under the DGCL or any other applicable law or (iv) such indemnification is required to be made under subsection (d) of this Section 46.

**(b) Other Officers, Employees and Other Agents.** The Corporation shall have the power to indemnify (including the power to advance expenses in a manner consistent with subsection (c) of this Section 46) its other officers, employees and other agents as set forth in the DGCL or any other applicable law. The Board of Directors shall have the power to delegate the determination of whether indemnification shall be given to any such person except executive officers to such officers or other persons as the Board of Directors shall determine.

**(c) Expenses.** The Corporation shall advance to any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative, by reason of the fact that he is or was a director or executive officer, of the Corporation, or is or was serving at the request of the Corporation as a director or executive officer of another Corporation, partnership, joint venture, trust or other enterprise, prior to the final disposition of the proceeding, promptly following request therefor, all expenses incurred by any director or executive officer in connection with such proceeding provided, however, that if the DGCL requires, an advancement of expenses incurred by a director or executive officer in his or her capacity as a director or executive officer (and not in any other capacity in which service was or is rendered by such indemnitee, including, without limitation, service to an employee benefit plan) shall be made only upon delivery to the Corporation of an undertaking (hereinafter an "*undertaking*"), by or on behalf of such indemnitee, to repay all amounts so advanced if it shall ultimately be determined by final judicial decision from which there is no further right to appeal (hereinafter a "*final adjudication*") that such indemnitee is not entitled to be indemnified for such expenses under this Section 46 or otherwise.

Notwithstanding the foregoing, unless otherwise determined pursuant to paragraph (e) of this Section 46, no advance shall be made by the Corporation to an executive officer of the Corporation (except by reason of the fact that such executive officer is or was a director of the Corporation in which event this paragraph shall not apply) in any action, suit or proceeding, whether civil, criminal, administrative or investigative, if a determination is reasonably and promptly made (i) by a majority vote of directors who were not parties to the proceeding, even if not a quorum, or (ii) by a committee of such directors designated by a majority vote of such directors, even though less than a quorum, or (iii) if there are no such directors, or such directors so direct, by independent legal counsel in a written opinion, that the facts known to the decision-making party at the time such determination is made demonstrate clearly and convincingly that such person acted in bad faith or in a manner that such person did not believe to be in or not opposed to the best interests of the Corporation.

**(d) Enforcement.** Without the necessity of entering into an express contract, all rights to indemnification and advances to directors and executive officers under this Bylaw shall be deemed to be contractual rights, shall vest when the person becomes a director or executive officer of the corporation, shall continue as vested contract rights even if such person ceases to be a director or executive officer of the corporation and shall be effective to the same extent and as if provided for in a contract between the Corporation and the director or executive officer. Any right to indemnification or advances granted by this section to a director or executive officer shall be enforceable by or on behalf of

the person holding such right in any court of competent jurisdiction if (i) the claim for indemnification or advances is denied, in whole or in part, or (ii) no disposition of such claim is made within ninety (90) days of request therefor. To the fullest extent permitted by applicable law, the claimant in such enforcement action, if successful in whole or in part, shall be entitled to be paid also the expense of prosecuting the claim. In connection with any claim for indemnification, the Corporation shall be entitled to raise as a defense to any such action that the claimant has not met the standards of conduct that make it permissible under the DGCL or any other applicable law for the Corporation to indemnify the claimant for the amount claimed. In connection with any claim by an executive officer of the Corporation (except in any action, suit or proceeding, whether civil, criminal, administrative or investigative, by reason of the fact that such executive officer is or was a director of the Corporation) for advances, the Corporation shall be entitled to raise a defense as to any such action clear and convincing evidence that such person acted in bad faith or in a manner that such person did not believe to be in or not opposed to the best interests of the Corporation, or with respect to any criminal action or proceeding that such person acted without reasonable cause to believe that his or her conduct was lawful. Neither the failure of the Corporation (including its Board of Directors, independent legal counsel or its stockholders) to have made a determination prior to the commencement of such action that indemnification of the claimant is proper in the circumstances because he or she has met the applicable standard of conduct set forth in the DGCL or any other applicable law, nor an actual determination by the Corporation (including its Board of Directors, independent legal counsel or its stockholders) that the claimant has not met such applicable standard of conduct, shall be a defense to the action or create a presumption that claimant has not met the applicable standard of conduct. In any suit brought by a director or executive officer to enforce a right to indemnification or to an advancement of expenses hereunder, the burden of proving that the director or executive officer is not entitled to be indemnified, or to such advancement of expenses, under this Section 46 or otherwise shall be on the Corporation.

(e) **Non-Exclusivity of Rights.** The rights conferred on any person by this Section 46 shall not be exclusive of any other right that such person may have or hereafter acquire under any applicable statute, provision of the Certificate of Incorporation, Bylaws, agreement, vote of stockholders or disinterested directors or otherwise, both as to action in his or her official capacity and as to action in another capacity while holding office. The Corporation is specifically authorized to enter into individual contracts with any or all of its directors, officers, employees or agents respecting indemnification and advances, to the fullest extent not prohibited by the DGCL, or by any other applicable law.

(f) **Survival of Rights.** The rights conferred on any person by this Bylaw shall continue as to a person who has ceased to be a director, executive officer, other officer, employee or other agent and shall inure to the benefit of the heirs, executors and administrators of such a person.

(g) **Insurance.** To the fullest extent permitted by the DGCL or any other applicable law, the Corporation, upon approval by the Board of Directors, may purchase and maintain insurance on behalf of any person required or permitted to be indemnified pursuant to this Section 46.

(h) **Amendments.** Any repeal or modification of this Section 46 shall only be prospective and shall not affect the rights under this Bylaw in effect at the time of the alleged occurrence of any action or omission to act that is the cause of any proceeding against any agent of the Corporation.

(i) **Saving Clause.** If this Bylaw or any portion hereof shall be invalidated on any ground by any court of competent jurisdiction, then the Corporation shall nevertheless indemnify each director and executive officer to the full extent not prohibited by any applicable portion of this Section 46 that shall not have been invalidated, or by any other applicable law. If this Section 46 shall be invalid due to the application of the indemnification provisions of another jurisdiction, then the Corporation shall indemnify each director and executive officer to the full extent under any other applicable law.

(j) **Certain Definitions.** For the purposes of Article XI of these Bylaws, the following definitions and rules of construction shall apply:

(i) The term “*proceeding*” shall be broadly construed and shall include, without limitation, the investigation, preparation, prosecution, defense, settlement, arbitration and appeal of, and the giving of testimony in, any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative.

(ii) The term “*expenses*” shall be broadly construed and shall include, without limitation, court costs, attorneys’ fees, witness fees, fines, amounts paid in settlement or judgment and any other costs and expenses of any nature or kind incurred in connection with any proceeding.

(iii) The term the “*Corporation*” shall include, in addition to the resulting Corporation, any constituent Corporation (including any constituent of a constituent) absorbed in a consolidation or merger which, if its separate existence had continued, would have had power and authority to indemnify its directors, officers, and employees or agents, so that any person who is or was a director, officer, employee or agent of such constituent Corporation, or is or was serving at the request of such constituent Corporation as a director, officer, employee or agent of another Corporation, partnership, joint venture, trust or other enterprise, shall stand in the same position under the provisions of this Section 46 with respect to the resulting or surviving Corporation as he would have with respect to such constituent Corporation if its separate existence had continued.

(iv) References to a “*director*,” “*executive officer*,” “*officer*,” “*employee*,” or “*agent*” of the Corporation shall include, without limitation, situations where such person is serving at the request of the Corporation as, respectively, a director, executive officer, officer, employee, trustee or agent of another Corporation, partnership, joint venture, trust or other enterprise.

(v) References to “*other enterprises*” shall include employee benefit plans; references to “*fines*” shall include any excise taxes assessed on a person with respect to an employee benefit plan; and references to “*servng at the request of the Corporation*” shall include any service as a director, officer, employee or agent of the Corporation which imposes duties on, or involves services by, such director, officer, employee, or agent with respect to an employee benefit plan, its participants, or beneficiaries; and a person who acted in good faith and in a manner such person reasonably believed to be in the interest of the participants and beneficiaries of an employee benefit plan shall be deemed to have acted in a manner “*not opposed to the best interests of the Corporation*” as referred to in this Section 46.

## ARTICLE XII

### NOTICES

#### Section 47. Notices.

(a) **Notice to Stockholders.** Written notice to stockholders of stockholder meetings shall be given as provided in Section 7 herein. Without limiting the manner by which notice may otherwise be given effectively to stockholders under any agreement or contract with such stockholder, and except as otherwise required by applicable law, written notice to stockholders for purposes other than stockholder meetings may be sent by U.S. mail or nationally recognized overnight courier, or by facsimile, telegraph or telex or by electronic mail or other electronic means.

(b) **Notice to Directors.** Any notice required to be given to any director may be given by the method stated in subsection (a), as otherwise provided in these Bylaws (including by any of the means specified in Section 22(d)), or by overnight delivery service. Any notice sent by overnight

delivery service or U.S. mail shall be sent to such address as such director shall have filed in writing with the Secretary of the Corporation, or, in the absence of such filing, to the last known address of such director.

(c) **Affidavit of Mailing.** An affidavit of mailing, executed by a duly authorized and competent employee of the Corporation or its transfer agent appointed with respect to the class or series of stock affected, or other agent, specifying the name and address or the names and addresses of the stockholder or stockholders, or director or directors, to whom any such notice or notices was or were given, and the time and method of giving the same, shall in the absence of fraud, be prima facie evidence of the facts therein contained.

(d) **Methods of Notice.** It shall not be necessary that the same method of giving notice be employed in respect of all recipients of notice, but one permissible method may be employed in respect of any one or more, and any other permissible method or methods may be employed in respect of any other or others.

(e) **Notice to Person With Whom Communication is Unlawful.** Whenever notice is required to be given, under applicable law or any provision of the Certificate of Incorporation or Bylaws of the Corporation, to any person with whom communication is unlawful, the giving of such notice to such person shall not be required and there shall be no duty to apply to any governmental authority or agency for a license or permit to give such notice to such person. Any action or meeting which shall be taken or held without notice to any such person with whom communication is unlawful shall have the same force and effect as if such notice had been duly given. In the event that the action taken by the Corporation is such as to require the filing of a certificate under any provision of the DGCL, the certificate shall state, if such is the fact and if notice is required, that notice was given to all persons entitled to receive notice except such persons with whom communication is unlawful.

(f) **Notice to Stockholders Sharing an Address.** Except as otherwise prohibited under the DGCL, any notice given under the provisions of the DGCL, the Certificate of Incorporation or these Bylaws shall be effective if given by a single written notice to stockholders who share an address if consented to by the stockholders at that address to whom such notice is given. Such consent shall have been deemed to have been given if such stockholder fails to object in writing to the Corporation within sixty (60) days of having been given notice by the Corporation of its intention to send the single notice. Any consent shall be revocable by the stockholder by written notice to the Corporation.

### ARTICLE XIII

#### AMENDMENTS

**Section 48. Amendments.** Subject to the limitations set forth in Section 46(h) of these Bylaws or the provisions of the Certificate of Incorporation, the Board of Directors is expressly empowered to adopt, amend or repeal these Bylaws of the Corporation. Any adoption, amendment or repeal of these Bylaws of the Corporation by the Board of Directors shall require the approval of a majority of the authorized number of directors. The stockholders also shall have power to adopt, amend or repeal these Bylaws of the Corporation; *provided, however,* that, in addition to any vote of the holders of any class or series of stock of the Corporation required by law or by the Certificate of Incorporation, such action by stockholders shall require the affirmative vote of the holders of at least sixty-six and two-thirds percent (66-2/3%) of the voting power of all of the then-outstanding shares of the capital stock of the Corporation entitled to vote generally in the election of directors, voting together as a single class.

**CERTIFICATION OF CHIEF EXECUTIVE OFFICER PURSUANT TO RULE 13A-14(A) AND 15D-14(A) OF THE SECURITIES EXCHANGE ACT OF 1934, AS AMENDED, AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002**

I, Bill Gross, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q for the period ended September 30, 2022 of Heliogen, Inc. (the “registrant”);
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(s) 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(s) 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: November 8, 2022

By: /s/ Bill Gross  
Bill Gross  
Chief Executive Officer  
(Principal Executive Officer)

**CERTIFICATION OF PRINCIPAL FINANCIAL OFFICER PURSUANT TO RULE 13A-14(A) AND 15D-14(A) OF THE SECURITIES EXCHANGE ACT OF 1934, AS AMENDED, AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002**

I, Christiana Obiaya, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q for the period ended September 30, 2022 of Heliogen, Inc. (the “registrant”);
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(s) 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(s) 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: November 8, 2022

By: /s/ Christiana Obiaya  
Christiana Obiaya  
Chief Financial Officer  
*(Principal Financial Officer and Principal Accounting Officer)*

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

In connection with this Quarterly Report on Form 10-Q for the period ended September 30, 2022 of Heliogen, Inc. (the "Company") as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Bill Gross, Chief Executive Officer of the Company, certify, pursuant to 18 U.S.C Section 1350, as adopted pursuant to Section 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) 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.

Date: November 8, 2022

By: /s/ Bill Gross

Bill Gross  
Chief Executive Officer  
*(Principal Executive Officer)*

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

In connection with this Quarterly Report on Form 10-Q for the period ended September 30, 2022 of Heliogen, Inc. (the "Company") as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Christiana Obiaya, Chief Financial Officer of the Company, certify, pursuant to 18 U.S.C Section 1350, as adopted pursuant to Section 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) 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.

Date: November 8, 2022

By: /s/ Christiana Obiaya  
Christiana Obiaya  
Chief Financial Officer  
*(Principal Financial Officer and Principal Accounting Officer)*