

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

AMENDMENT NO. 1
TO
FORM S-3
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

HELIOGEN, INC.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

85-4204953
(I.R.S. Employer
Identification Number)

130 West Union Street
Pasadena, California 91103
626-720-4530

(Address, including zip code, and telephone number, including area code, of Registrant's principal executive offices)

Debbie Chen
General Counsel
Heliogen, Inc.
130 West Union Street
Pasadena, California 91103
Tel: 626-720-4530

(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copy to:

John-Paul Motley
Cooley LLP
355 South Grand Avenue, 9th Floor
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Approximate date of commencement of proposed sale to the public: From time to time after the effective date of this Registration Statement.

If the only securities being registered on this Form are being offered pursuant to dividend or interest reinvestment plans, please check the following box:

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, as amended, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box:

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering:

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box.

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box.

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 7(a)(2)(B) of the Securities Act.

The Registrant hereby amends this Registration Statement on such date or dates as may be necessary to delay its effective date until the Registrant shall file a further amendment that specifically states that this registration statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933, as amended, or until the registration statement shall become effective on such date as the Securities and Exchange Commission, acting pursuant to said Section 8(a), may determine.

STATEMENT PURSUANT TO RULE 429

Pursuant to Rule 429 under the Securities Act of 1933, as amended (the "Securities Act"), the prospectus (the "Prospectus") included in this registration statement on Form S-3 (the "Registration Statement") is a combined prospectus relating to this Registration Statement and to the registration statement on Form S-1 (No. 333-262319), initially filed by Heliogen, Inc. on January 24, 2022, and declared effective on February 3, 2022, as most recently amended by Post-Effective Amendment No. 3 to Form S-1 on Form S-3, filed

on March 30, 2023 and declared effective on April 5, 2023 (the “Initial Registration Statement”). The Initial Registration Statement registered:

- (A) the issuance by the Company of up to 8,566,666 shares of common stock upon the exercise of warrants, comprised of up to 233,333 shares of common stock issuable upon the exercise by the holders thereof of 233,333 whole warrants (the “Private Warrants”) originally issued in a private placement in connection with the initial public offering of Athena Technology Acquisition Corp. (“Athena”) and up to 8,333,333 shares of common stock issuable upon the exercise by the holders thereof of 8,333,333 warrants (the “Public Warrants” and, together with the Private Warrants, the “Warrants”) originally issued in the initial public offering of Athena; and
- (B) the proposed resale, from time to time, in one or more offerings by the selling stockholders listed in the Initial Registration Statement of:
 - (i) up to an aggregate of 71,070,996 shares of common stock; and
 - (ii) up to 233,333 whole Private Warrants.

This Registration Statement, which is a new registration statement, combines:

- (A) the shares of common stock and Warrants from the Initial Registration Statement, all of which are registered hereby for issuance by the Company and offer and resale by the selling stockholders named in the Prospectus, except that the resale by selling stockholders registered in the Initial Registration Statement of 45,356 shares of common stock and 70,000 Private Warrants were removed from this Registration Statement,
- (B) the resale by selling stockholders named herein of an additional 6,831,790 shares (including 163,333 shares issuable upon exercise of the Private Warrants), and
- (C) the offer and sale by the Company of up to an aggregate amount of \$150,000,000 of any combination of the securities described in this Prospectus for offering by the Company.

Pursuant to Rule 429 under the Securities Act, this Registration Statement also constitutes a post-effective amendment to the Initial Registration Statement (the “Post-Effective Amendment”), and such Post-Effective Amendment shall hereafter become effective concurrently with the effectiveness of this Registration Statement in accordance with Section 8(c) of the Securities Act.

The information in this prospectus is not complete and may be changed. We may not sell these securities or accept an offer to buy these securities until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities and it is not soliciting offers to buy these securities in any state where such offer or sale is not permitted.

PROSPECTUS (Subject to Completion)

Dated May 10, 2023



**\$150,000,000
Common Stock
Preferred Stock
Debt Securities
Warrants
Rights
Units
and**

**Up to 8,496,666 Shares of Common Stock Issuable Upon Exercise of Warrants
Offered, from time to time, by Heliogen, Inc.**

and

**Up to 77,857,430 Shares of Common Stock
Up to 163,333 Warrants to Purchase Common Stock
Offered, from time to time, by the Selling Securityholders.**

From time to time, we may offer and sell up to an aggregate amount of \$150,000,000 of any combination of the securities described in this prospectus, either individually or in combination, at prices and on terms described in one or more supplements to this prospectus. We may also offer common stock or preferred stock upon conversion of debt securities, or common stock upon conversion of preferred stock, or common stock, preferred stock or debt securities upon exercise of warrants, rights or units. We may also issue up to 8,496,666 shares of common stock upon the exercise by the holders thereof of certain outstanding warrants, comprised of (i) up to 163,333 shares of common stock issuable upon the exercise by the holders thereof of 163,333 whole warrants (the “Private Warrants”) originally issued in a private placement in connection with the initial public offering of Athena Technology Acquisition Corp. (“Athena”) and (ii) up to 8,333,333 shares of common stock issuable upon the exercise by the holders thereof of 8,333,333 warrants (the “Public Warrants” and, together with the Private Warrants, the “Warrants”) originally issued in the initial public offering of Athena.

In addition, the selling securityholders named in this prospectus (the “Selling Securityholders”) may, from time to time in one or more offerings, offer and sell (i) up to 77,857,430 shares of our common stock, \$0.0001 par value per share (“common stock”) (including up to 163,333 shares of common stock issuable upon the exercise of the Private Warrants) and (ii) up to 163,333 whole Private Warrants. The registration of the securities covered by this prospectus does not necessarily mean that any of the Selling Securityholders will offer or sell any of the shares of common stock or Warrants. We will not receive any proceeds from the resale of shares of common stock or Warrants, from time to time in one or more offerings, by the Selling Securityholders, but we have agreed to pay substantially all of the expenses incidental to the registration, offering and sale of securities pursuant to this prospectus by the Selling Securityholders, except that we will not bear any brokers’ or underwriters’ discounts and commissions, fees and expenses of counsel to underwriters or brokers, transfer taxes or transfer fees relating to the sale of shares of securities pursuant to this prospectus by the Selling Securityholders.

This prospectus describes some of the general terms that may apply to an offering of our securities by us or the Selling Securityholders. We will provide the specific terms of these offerings and securities in one or more supplements to this prospectus. We may also authorize one or more free writing prospectuses to be provided to you in connection with these offerings. The prospectus supplement and any related free writing prospectus may also add, update or change information contained in this prospectus. You should carefully read this prospectus, the applicable prospectus supplement and any related free writing prospectus, as well as any documents incorporated by reference, before buying any of the securities being offered.

Our common stock and Public Warrants are listed on the New York Stock Exchange under the trading symbols “HLGN” and “HLGN.W,” respectively. On May 8, 2023, the last reported sale price of our common stock was \$0.28 per share, and the last reported sale price of our Public Warrants was \$0.04 per Public Warrant. The applicable prospectus supplement will contain information, where applicable, as to other listings, if any, on the New York Stock Exchange or any securities market or other exchange of

the securities covered by the applicable prospectus supplement.

Investing in our securities involves a high degree of risk. You should review carefully the risks and uncertainties described under the section titled “Risk Factors” on page 4 of this prospectus and any similar section contained in the applicable prospectus supplement and in any free writing prospectuses we have authorized for use in connection with a specific offering, and under similar headings in the documents that are incorporated by reference into this prospectus.

This prospectus may not be used to consummate a sale of securities unless accompanied by a prospectus supplement.

The securities may be sold directly by us or the Selling Securityholders to investors, through agents designated from time to time or to or through underwriters or dealers, on a continuous or delayed basis. For additional information on the methods of sale, you should refer to the section titled “Plan of Distribution” in this prospectus. If any agents or underwriters are involved in the sale of any of our securities with respect to which this prospectus is being delivered, the names of such agents or underwriters and any applicable fees, commissions, discounts and overallotment options will be set forth in a prospectus supplement. The price to the public of such securities and the net proceeds we expect to receive from such sale will also be set forth in a prospectus supplement.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The date of this prospectus is , 2023.

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ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement on Form S-3 that we filed with the Securities and Exchange Commission, or the SEC, using a “shelf” registration process under the Securities Act of 1933, as amended (the “Securities Act”). Under this shelf registration statement, we may, from time to time, offer and sell in one or more offerings any securities described in this prospectus, either individually or in combination with other securities, in one or more offerings, up to a total dollar amount of \$150,000,000, at prices and on terms described in one or more supplements to this prospectus. We may also offer common stock or preferred stock upon conversion of debt securities, or common stock upon conversion of preferred stock, or common stock, preferred stock or debt securities upon exercise of warrants, rights or units. We may also issue up to 8,496,666 shares of common stock upon the exercise by the holders thereof of the Warrants. In addition, the Selling Securityholders may, from time to time, offer and sell in one or more offerings up to 77,857,430 shares of common stock or up to 163,333 Private Warrants from time to time. This prospectus provides you with a general description of the securities we or the Selling Securityholders may offer.

Each time we or the Selling Securityholders offer any type or series of securities under this prospectus, we will provide a prospectus supplement that will contain more specific information about the terms of that offering. We may also authorize one or more free writing prospectuses to be provided to you that may contain material information relating to these offerings. The prospectus supplement and any related free writing prospectus that we may authorize to be provided to you may also add, update or change any of the information contained in this prospectus or in the documents that we have incorporated by reference into this prospectus. This prospectus, together with the applicable prospectus supplement, any related free writing prospectus and the documents incorporated by reference into this prospectus and the applicable prospectus supplement, will include all material information relating to the applicable offering. We urge you to read carefully this prospectus, any applicable prospectus supplement and any related free writing prospectuses we have authorized for use in connection with a specific offering, together with the information incorporated herein by reference as described under the section titled “Incorporation of Certain Information by Reference,” before buying any of the securities being offered.

This prospectus may not be used to consummate a sale of securities unless it is accompanied by a prospectus supplement.

You should rely only on the information contained in, or incorporated by reference into, this prospectus and any applicable prospectus supplement, along with the information contained in any free writing prospectuses we have authorized for use in connection with a specific offering. We have not authorized anyone, including the Selling Securityholders, to provide you with any information other than that contained or incorporated by reference in this prospectus and any applicable prospectus supplement, along with the information contained in any free writing prospectuses we have authorized for use in connection with a specific offering. You must not rely upon any information or representation not contained or incorporated by reference in this prospectus, the accompanying prospectus supplement or in any related free writing prospectus that we may authorize to be provided to you. We take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. This prospectus is an offer to sell only the securities offered hereby, but only under circumstances and in jurisdictions where it is lawful to do so.

The information appearing in this prospectus, any applicable prospectus supplement and any related free writing prospectus is accurate only as of the date on the front of the document, and any information we have incorporated by reference is accurate only as of the date of the document incorporated by reference, regardless of the time of delivery of this prospectus, any applicable prospectus supplement or any related free writing prospectus, or any sale of securities. Our business, financial condition, results of operations and prospects may have changed since those dates.

This prospectus contains and incorporates by reference market data and industry statistics and forecasts that are based on independent industry publications and other publicly available information. Although we believe that these sources are reliable, we do not guarantee the accuracy or completeness of this information and we have not independently verified this information. Although we are not aware of any misstatements regarding the market and industry data presented in this prospectus and the documents incorporated herein by reference, these estimates involve risks and uncertainties and are subject to change based on various factors, including those discussed under the section titled “*Risk Factors*” contained in the applicable prospectus supplement and any related free writing prospectus, and under similar headings in the other documents that are incorporated by reference into this prospectus. Accordingly, investors should not place undue reliance on this information.

This prospectus contains summaries of certain provisions contained in some of the documents described herein, but reference is made to the actual documents for complete information. All of the summaries are qualified in their entirety by the actual documents. Copies of some of the documents referred to herein have been filed, will be filed or will be incorporated by reference as exhibits to the registration statement of which this prospectus is a part, and you may obtain copies of those documents as described below under the section titled “*Where You Can Find Additional Information*.”

In this prospectus, unless the context suggests otherwise, “we,” “us,” “our,” “Company,” and “Heliogen” refer to Heliogen, Inc. and its consolidated subsidiaries.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus and the documents incorporated by reference herein and any prospectus supplement delivered with this prospectus may contain forward-looking statements within the meaning of Section 27A of the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended (the “Exchange Act”). 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 prospectus 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 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;
- our ability to maintain listing on the New York Stock Exchange (“NYSE”);
- 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 any 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;
- supply chain disruptions;
- our ability to protect our intellectual property (“IP”);
- the actions of stockholders and the related impact on the price of our common stock;
- expectations regarding the time during which we will be an emerging growth company under the Jumpstart Our Business Startups Act of 2012, as amended;

- our ability to find and retain critical employee talent and key personnel;
- our ability to successfully manage the transition process to a new Chief Executive Officer;
- the possibility that we may be adversely impacted by other economic, business, and/or competitive factors;
- future exchange and interest rates;

- the outcome of any known and unknown litigation and regulatory proceedings; and
- other risks and uncertainties, including those under the section titled “Risk Factors” in this prospectus, and other filings that have been made or will be made with the SEC by the Company.

The foregoing list of forward-looking statements is not exhaustive. Because forward-looking statements are inherently subject to risks and uncertainties, some of which cannot be predicted or quantified and some of which are beyond our control, you should not rely on these forward-looking statements as predictions of future events. Although we believe that we have a reasonable basis for each forward-looking statement contained in this prospectus or any documents incorporated by reference herein and any prospectus supplement, the events and circumstances reflected in our forward-looking statements may not be achieved or occur and actual results could differ materially from those projected in the forward-looking statements.

Given these risks and uncertainties, you should not place undue reliance on these forward-looking statements. Additional cautionary statements or discussions of risks and uncertainties that could affect our results or the achievement of the expectations described in forward-looking statements may also be contained in any accompanying prospectus supplement.

Should one or more of the risks or uncertainties described in this prospectus, 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 can be found in the section entitled “Risk Factors” and in our periodic filings with the SEC. Our SEC filings are available publicly on the SEC’s website at www.sec.gov.

You should read this prospectus completely and 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.

PROSPECTUS SUMMARY

This summary highlights selected information contained elsewhere in this prospectus or incorporated by reference in this prospectus, and does not contain all of the information that you need to consider in making your investment decision. You should carefully read the entire prospectus, the applicable prospectus supplement and any related free writing prospectus, including the risks of investing in our securities discussed under the sections titled “Risk Factors” contained in this prospectus, the applicable prospectus supplement and any related free writing prospectus, and under similar sections in the other documents that are incorporated by reference into this prospectus. You should also carefully read the other information incorporated by reference into this prospectus, including our financial statements, and the exhibits to the registration statement of which this prospectus is a part.

HELIOGEN, INC.

Overview

Heliogen is a leader in next generation concentrated solar energy. 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 product offering will deliver industrial process steam around the clock using thermal energy storage based on proven technology. This steam can also be used to produce green hydrogen when coupled with a solid oxide electrolyzer. Our next generation system will have the ability to cost-effectively generate and store thermal energy at very high temperatures, which enables cost effective production of electricity and higher temperature industrial process heat. The inclusion of a thermal energy storage system 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 carbon-free industrial-grade heat and steam (for use in industrial processes), clean power (electricity), and generation of 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 AI 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 next generation 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 and steam, electric power or green hydrogen fuel.

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

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 — With the baseline system as the foundation, the addition of an electrolyzer system will enable hydrogen fuel production.

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) to support industrial processes. HelioPower plants will deliver solar thermal energy to a heat engine to produce electrical power. HelioFuel plants will couple HelioHeat and HelioPower technology 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.

- 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 IP through a licensing model to third parties interested in manufacturing and installing the hardware.

Corporate Information

Heliogen, Inc. (formerly known as Athena Technology Acquisition Corp., or “Athena”) was a blank check or “special purpose acquisition” company, incorporated as a Delaware corporation on December 8, 2020, and formed for the purpose of effecting a merger, capital stock exchange, asset acquisition, stock purchase, reorganization or similar business combination with one or more businesses. Athena completed its initial public offering in March 2021. HelioMax Merger Sub, Inc., a Delaware corporation, was a wholly-owned subsidiary of Athena, formed by Athena on May 27, 2021 to consummate the Business Combination. On December 30, 2021, HelioMax Merger Sub merged with and into Heliogen Holdings, Inc. (formerly known as Heliogen, Inc.) whereupon the separate corporate existence of Merger Sub ceased with Heliogen Holdings, Inc. continuing as the surviving corporation and a subsidiary of Athena. Upon the closing of the business combination, Athena changed its name to Heliogen, Inc. The mailing address of our principal executive office is 130 West Union St., Pasadena, California 91103. Our telephone number is (626) 720-4530.

“Heliogen” and our other registered and common law trade names, trademarks and service marks are property of Heliogen, Inc. This prospectus contains additional trade names, trademarks and service marks of others, which are the property of their respective owners. Solely for convenience, trademarks and trade names referred to in this prospectus may appear without the ® or ™ symbols.

The Securities We May Offer

We may offer any securities described in this prospectus, either individually or in combination with other securities, up to a total dollar amount of \$150,000,000, from time to time under this prospectus, together with the applicable prospectus supplement and any related free writing prospectus, at prices and on terms to be determined by market conditions at the time of any offering. In addition, we may issue up to 8,496,666 shares of common stock upon the exercise by the holders thereof of the Warrants. This prospectus provides you with a general description of the securities we may offer. Each time we offer a type or series of securities under this prospectus, we will provide a prospectus supplement that will describe the specific amounts, prices and other important terms of the securities, including, to the extent applicable:

- designation or classification;
- aggregate principal amount or aggregate offering price;
- maturity date, if applicable;

- original issue discount, if any;
- rates and times of payment of interest or dividends, if any;
- redemption, conversion, exercise, exchange or sinking fund terms, if any;
- ranking;
- restrictive covenants, if any;
- voting or other rights, if any;
- conversion or exchange prices or rates, if any, and, if applicable, any provisions for changes to or adjustments in the conversion or exchange prices or rates and in the securities or other property receivable upon conversion or exchange; and
- material or special U.S. federal income tax considerations, if any.

The applicable prospectus supplement and any related free writing prospectus that we may authorize to be provided to you may also add, update or change any of the information contained in this prospectus or in the documents we have incorporated by reference.

We may sell the securities directly to investors or to or through agents, underwriters or dealers. We and our agents or underwriters, reserve the right to accept or reject all or part of any proposed purchase of securities. If we do offer securities to or through agents or underwriters, we will include in the applicable prospectus supplement:

- the names of those agents or underwriters;
- applicable fees, discounts and commissions to be paid to them;
- details regarding overallotment options, if any; and
- the net proceeds to us.

Securities Offered by the Selling Securityholders

We are registering the resale by the Selling Securityholders named in this prospectus, or their permitted transferees of (i) up to an aggregate of 77,857,430 shares of common and (ii) up to 163,333 Private Warrants, previously issued to the selling stockholders named therein. The Warrants are redeemable in certain circumstances. See the section entitled “Description of Capital Stock — Warrants” for further discussion. The Selling Securityholders will determine when and how they will dispose of the securities registered for resale under this prospectus.

Use of Proceeds

Except as described in any applicable prospectus supplement or in any free writing prospectuses we have authorized for use in connection with a specific offering, we currently intend to use the net proceeds from the sale of the securities offered by us hereunder, if any, for working capital and general corporate purposes. We will set forth in the applicable prospectus supplement or free writing prospectus our intended use for the net proceeds received from the sale of any securities sold pursuant to the prospectus supplement or free writing prospectus. All of the securities offered by the Selling Securityholders pursuant to this prospectus will be sold by the Selling Securityholders for their respective accounts. We will not receive any of the proceeds from these sales.

New York Stock Exchange Listing

Our common stock and Public Warrants are listed on the New York Stock Exchange under the symbols “HLGN” and “HLGN.W,” respectively. The applicable prospectus supplement will contain information, where applicable, as to other listings, if any, on the New York Stock Exchange or any other securities market or other exchange of the securities covered by the applicable prospectus supplement.

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RISK FACTORS

Investing in our securities involves risks. Before you make a decision to buy our securities, in addition to the risks and uncertainties discussed above under *Special Note Regarding Forward-Looking Statements*, you should carefully consider the specific risks set forth herein. If any of these risks actually occur, it may materially harm our business, financial condition, liquidity incorporated by reference to our most recent Annual Report on Form 10-K, any subsequent Quarterly Reports on Form 10-Q or Current Reports on Form 8-K, and all other information contained or incorporated by reference into this prospectus, as updated by our subsequent filings under the Exchange Act, and the risk factors and other information contained in any applicable prospectus supplement before acquiring any of such securities. Additional risks and uncertainties not presently known to us or that we currently believe to be immaterial may become material and adversely affect our business. The occurrence of any of these risks might cause you to lose all or part of your investment in the offered securities.

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USE OF PROCEEDS

Except as described in any applicable prospectus supplement or in any free writing prospectuses we have authorized for use in connection with a specific offering, we currently intend to use the net proceeds from the sale of securities offered by us for working capital and general corporate purposes. We will set forth in the applicable prospectus supplement or free writing prospectus our intended use for the net proceeds received from the sale of any securities sold by us pursuant to the prospectus supplement or free writing prospectus. We intend to invest the net proceeds to us from the sale of securities offered by us hereby that are not used as described above in short-term, investment-grade, interest-bearing instruments.

All of the securities offered by the Selling Securityholders pursuant to this prospectus will be sold by the Selling Securityholders for their respective accounts. We will not receive any of the proceeds from these sales.

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DESCRIPTION OF CAPITAL STOCK

The following summary description is based on the provisions of our second amended and restated certificate of incorporation (“Certificate of Incorporation”), our second amended and restated bylaws (“Bylaws”), warrant agreements governing our outstanding Warrants (including that certain Warrant Agreement, dated March 16, 2021, by and between Athena and Continental Stock Transfer & Trust Company, the “Warrant Agreement”), and the applicable provisions of the Delaware General Corporation Law (the “DGCL”). This information may not be complete in all respects and is qualified entirely by reference to the provisions of our Certificate of Incorporation and Bylaws, and is qualified in its entirety by reference to our Certificate of Incorporation and our Bylaws which are incorporated by reference into the registration statement of which this prospectus is a part.

General

Our Certificate of Incorporation authorizes the issuance of 500,000,000 shares of common stock, \$0.0001 par value per share and 10,000,000 shares of preferred stock, \$0.0001 par value per share. As of May 8, 2023, there were 196,895,138 shares of common stock issued and outstanding, which shares were held by 460 stockholders of record, and no shares of preferred stock outstanding. The following description summarizes certain terms of our capital stock as set out more particularly in our Certificate of Incorporation. The rights, preferences and privileges of holders of our common stock are subject to, and may be adversely affected by, the rights of the holders of shares of any series of preferred stock that we may issue in the future.

Common Stock

Voting Rights

Except as otherwise required by law or as otherwise provided in any certificate of designation for any series of preferred stock, the holders of our common stock possess all voting power for the election of our directors and all other matters requiring stockholder act on. Holders of our common stock are entitled to one vote per share on matters to be voted on by stockholders.

Dividend Rights

Subject to preferences that may apply to any then-outstanding preferred stock, holders of our common stock are entitled to receive ratable dividends when, as and if declared by our board of directors (the “Board”) out of funds legally available therefor. We do not anticipate paying any cash dividends in the foreseeable future.

Liquidation

In the event of our voluntary or involuntary liquidation, dissolution, distribution of assets or winding-up, the holders of our common stock will be entitled to receive an equal amount per share of all of our assets of whatever kind available for distribution to stockholders, after the rights of the holders of any preferred stock have been satisfied.

Preemptive or Similar Rights

Holders of our common stock have no conversion, preemptive or other subscription rights and there will be no sinking fund or redemption provisions applicable to our common stock.

Election of Directors

Our Board is divided into three classes, Class I, Class II and Class III, with members of each class serving staggered three-year terms with only one class of directors being elected in each year. There is no cumulative voting with respect to the election of directors, with the result that the holders of more than 50% of the shares voted for the election of directors can elect all of the directors.

Preferred Stock

Under our Certificate of Incorporation, our Board may, without further action by our stockholders, fix the rights, preferences, privileges and restrictions of up to an aggregate of 10,000,000 shares of preferred stock in one or more series and authorize their issuance. These rights, preferences and privileges could include dividend rights, conversion rights, voting rights, terms of redemption, liquidation preferences and the number of shares constituting any series or the designation of such series, any or all of which may be greater than the rights of common stock. Any issuance of preferred stock could adversely affect the voting power of holders of common stock and the likelihood that such holders would receive dividend payments and payments on liquidation. In addition, the issuance of preferred stock could have the effect of delaying, deterring or preventing a change of control or other corporate action.

We will fix the designations, voting powers, preferences and rights of the preferred stock of each series we issue under this prospectus, as well as the qualifications, limitations or restrictions thereof, in the certificate of designation relating to that series. We will file as an exhibit to the registration statement of which this prospectus is a part, or will incorporate by reference from reports that we file with the SEC, the form of any certificate of designation that contains the terms of the series of preferred stock we are offering. We will describe in the applicable prospectus supplement the terms of the series of preferred stock being offered, including, to the extent applicable:

- the title and stated value;
- the number of shares we are offering;
- the liquidation preference per share;
- the purchase price;
- the dividend rate, period and payment date and method of calculation for dividends;
- whether dividends will be cumulative or non-cumulative and, if cumulative, the date from which dividends will accumulate;
- the procedures for any auction and remarketing, if applicable;
- the provisions for a sinking fund, if applicable;
- the provisions for redemption or repurchase, if applicable, and any restrictions on our ability to exercise those redemption and repurchase rights;
- any listing of the preferred stock on any securities exchange or market;
- whether the preferred stock will be convertible into our common stock, and, if applicable, the conversion price, or how it will be calculated, and the conversion period;
- whether the preferred stock will be exchangeable into debt securities, and, if applicable, the exchange price, or how it will be calculated, and the exchange period;
- voting rights of the preferred stock;
- preemptive rights, if any;
- restrictions on transfer, sale or other assignment;
- whether interests in the preferred stock will be represented by depositary shares;
- a discussion of any material or special U.S. federal income tax considerations applicable to the preferred stock;
- the relative ranking and preferences of the preferred stock as to dividend rights and rights if we liquidate, dissolve or wind up our affairs;
- any limitations on the issuance of any class or series of preferred stock ranking senior to or on a parity with the series of preferred stock as to dividend rights and rights if we liquidate, dissolve or wind up our affairs; and
- any other specific terms, preferences, rights or limitations of, or restrictions on, the preferred stock.

The transfer agent for each series of preferred stock will be described in the applicable prospectus supplement.

At May 8, 2023, there were 8,566,666 Warrants to purchase common stock outstanding, consisting of 8,333,333 Public Warrants and 233,333 Private Warrants. The Private Warrants are held by the initial stockholders of Athena. Each Warrant entitles the registered holder to purchase one share of common stock at a price of \$11.50 per share at any time. The Warrants will expire on December 30, 2026, or earlier upon redemption or liquidation.

Public Warrants

Each whole Public Warrant entitles the registered holder to purchase one share of common stock at a price of \$11.50 per share, subject to adjustment as discussed below, provided in each case that we have an effective registration statement under the Securities Act covering the shares of common stock issuable upon exercise of the Public Warrants and a current prospectus relating to them is available (or we permit holders to exercise their Public Warrants on a cashless basis under the circumstances specified in the warrant agreement) and such shares are registered, qualified or exempt from registration under the securities, or blue sky, laws of the state of residence of the holder. Pursuant to the warrant agreement, a Public Warrant holder may exercise its Public Warrants only for a whole number of shares of common stock. The Public Warrants will expire five years after the closing of our business combination on December 30, 2021 (the “Closing”), at 5:00 p.m., New York City time, or earlier upon redemption or liquidation.

We will not be obligated to deliver any common stock pursuant to the exercise of a Public Warrant and will have no obligation to settle such warrant exercise unless a registration statement under the Securities Act with respect to the common stock underlying the Public Warrants is then effective and a prospectus relating thereto is current, subject to our satisfying our obligations described below with respect to registration. No Public Warrant will be exercisable and we will not be obligated to issue a share of common stock upon exercise of a warrant unless the share of common stock issuable upon such warrant exercise has been registered, qualified or deemed to be exempt under the securities laws of the state of residence of the registered holder of the Public Warrants. In the event that the conditions in the two immediately preceding sentences are not satisfied with respect to a Public Warrant, the holder of such Public Warrant will not be entitled to exercise such Public Warrant and such Public Warrant may have no value and expire worthless. In no event will we be required to net cash settle any Public Warrant. In the event that a registration statement is not effective for the exercised warrants, the purchaser of a unit containing such Public Warrant will have paid the full purchase price for the unit solely for the share of common stock underlying such unit.

We have filed with the SEC a registration statement for the registration, under the Securities Act, of the common stock issuable upon exercise of the Public Warrants. We have agreed to use our best efforts to maintain the effectiveness of such registration statement, and a current prospectus relating thereto, until the expiration of the Public Warrants in accordance with the provisions of the warrant agreement. If a registration statement covering the shares of common stock issuable upon exercise of the Public Warrants is not effective by the 60th business day after the Closing, warrant holders may, until such time as there is an effective registration statement and during any period when we will have failed to maintain an effective registration statement, exercise warrants on a “cashless basis” in accordance with Section 3(a)(9) of the Securities Act or another exemption. Notwithstanding the above, if our common stock are at the time of any exercise of a warrant not listed on a national securities exchange such that they satisfy the definition of a “covered security” under Section 18(b)(1) of the Securities Act, we may, at our option, require holders of the Public Warrants who exercise their warrants to do so on a “cashless basis” in accordance with Section 3(a)(9) of the Securities Act and, in the event we so elect, we will not be required to file or maintain in effect a registration statement, and in the event we do not so elect, we will use our best efforts to register or qualify the shares under applicable blue sky laws to the extent an exemption is not available.

Redemption of Public Warrants

Redemption of Public Warrants for cash. Once the Public Warrants become exercisable, we may call the Public Warrants for redemption for cash:

- in whole and not in part;
- at a price of \$0.01 per Public Warrant;
- upon not less than 30 days’ prior written notice of redemption to each warrant holder; and
- if, and only if, the closing price of the common stock equals or exceeds \$18.00 per share (as adjusted for stock splits, stock capitalizations, reorganizations, recapitalizations and the like) for any 20 trading days within a 30-trading day period commencing once the Public Warrants become exercisable and ending three business days before we send to the notice of redemption to the warrant holders.

If and when the Public Warrants become redeemable by us for cash, we may exercise our redemption right even if we are unable to register or qualify the underlying securities for sale under all applicable state securities laws.

We have established the last of the redemption criterion discussed above to prevent a redemption call unless there is at the time of the call a significant premium to the warrant exercise price. If the foregoing conditions are satisfied and we issue a notice of redemption of the Public Warrants, each warrant holder is entitled to exercise his, her or its Public Warrant prior to the scheduled redemption date. However, the price of the common stock may fall below the \$18.00 redemption trigger price (as adjusted for stock splits, stock capitalizations, reorganizations, recapitalizations and the like) as well as the \$11.50 warrant exercise price after the redemption notice is issued.

Redemption of Public Warrants for common stock. Commencing ninety days after the Public Warrants become exercisable, we may redeem the outstanding Public Warrants:

- in whole and not in part;
- at \$0.10 per Public Warrant upon a minimum of 30 days’ prior written notice of redemption provided that holders are able to exercise their Public Warrant prior to redemption and receive that number of shares determined by reference to the table below, based on the redemption date and the “fair market value” of our common stock except as otherwise described below;
- if, and only if, the last reported sale price of our common stock equals or exceeds \$10.00 per share (as adjusted for stock splits, stock dividends, reorganizations, recapitalizations and the like) on the trading day prior to the date on which we send the notice of redemption to the warrant holders;
- if, and only if, the Private Warrants are also concurrently exchanged at the same price (equal to a number of shares of common stock) as the outstanding Public Warrants, as described above; and
- if, and only if, there is an effective registration statement covering the issuance of the shares of common stock issuable upon exercise of the Public Warrants and a current prospectus relating thereto available throughout the 30-day period after written notice of redemption is given.

The numbers in the table below represent the number of shares of common stock that a warrant holder will receive upon exercise in connection with a redemption by us pursuant to this redemption feature, based on the “fair market value” of our common stock on the corresponding redemption date (assuming holders elect to exercise their Public Warrants and such Public Warrants are not redeemed for \$0.10 per warrant), determined based on the average of the last reported sales price for the 10 trading days ending on the third trading day prior to the date on which the notice of redemption is sent to the holders of Public Warrants, and the number of months that the corresponding

redemption date precedes the expiration date of the Public Warrants, each as set forth in the table below.

The stock prices set forth in the column headings of the table below will be adjusted as of any date on which the number of shares issuable upon exercise of a Public Warrant is adjusted as set forth in the first three paragraphs under the heading “— *Anti-dilution Adjustments*” below. The adjusted stock prices in the column headings will equal the stock prices immediately prior to such adjustment, multiplied by a fraction, the numerator of which is the number of shares deliverable upon exercise of a Public Warrant immediately prior to such adjustment and the denominator of which is the number of shares deliverable upon exercise of a Public Warrant as so adjusted. The number of shares in the table below shall be adjusted in the same manner and at the same time as the number of shares issuable upon exercise of a Public Warrant.

Redemption Date (period to expiration of warrants)	Fair Market Value of Common Stock								
	≤\$10.00	\$11.00	\$12.00	\$13.00	\$14.00	\$15.00	\$16.00	\$17.00	≥\$18.00
45 months	0.235	0.258	0.279	0.298	0.315	0.330	0.343	0.356	0.361
42 months	0.228	0.252	0.274	0.294	0.312	0.328	0.342	0.355	0.361
39 months	0.221	0.246	0.269	0.290	0.309	0.325	0.340	0.354	0.361
36 months	0.213	0.239	0.263	0.285	0.305	0.323	0.339	0.353	0.361
33 months	0.205	0.232	0.257	0.280	0.301	0.320	0.337	0.352	0.361
30 months	0.196	0.224	0.250	0.274	0.297	0.316	0.335	0.351	0.361
27 months	0.185	0.214	0.242	0.268	0.291	0.313	0.332	0.350	0.361
24 months	0.173	0.204	0.233	0.260	0.285	0.308	0.329	0.348	0.361
21 months	0.161	0.193	0.223	0.252	0.279	0.304	0.326	0.347	0.361
18 months	0.146	0.179	0.211	0.242	0.271	0.298	0.322	0.345	0.361
15 months	0.130	0.164	0.197	0.230	0.262	0.291	0.317	0.342	0.361
12 months	0.111	0.146	0.181	0.216	0.250	0.282	0.312	0.339	0.361
9 months	0.090	0.125	0.162	0.199	0.237	0.272	0.305	0.336	0.361
6 months	0.065	0.099	0.137	0.178	0.219	0.259	0.296	0.331	0.361
3 months	0.034	0.065	0.104	0.150	0.197	0.243	0.286	0.326	0.361
0 months	—	—	0.042	0.115	0.179	0.233	0.281	0.323	0.361

The exact fair market value and redemption date may not be set forth in the table above, in which case, if the fair market value is between two values in the table or the redemption date is between two redemption dates in the table, the number of shares of common stock to be issued for each Public Warrant exercised will be determined by a straight-line interpolation between the number of shares set forth for the higher and lower fair market values and the earlier and later redemption dates, as applicable, based on a 365 or 366-day year, as applicable. For example, if the average last reported sale price of our common stock for the 10 trading days ending on the third trading date prior to the date on which the notice of redemption is sent to the holders of the Public Warrants is \$11.00 per share, and at such time there are 42 months until the expiration of the Public Warrants, holders may choose to, in connection with this redemption feature, exercise their Public Warrants for 0.252 common stock for each whole Public Warrant. For an example where the exact fair market value and redemption date are not as set forth in the table above, if the average last reported sale price of our common stock for the 10 trading days ending on the third trading date prior to the date on which the notice of redemption is sent to the holders of the warrants is \$13.50 per share, and at such time there are 38 months until the expiration of the warrants, holders may choose to, in connection with this redemption feature, exercise their Public Warrants for 0.298 common stock for each whole Public Warrant. In no event will the Public Warrants be exercisable in connection with this redemption feature for more than 0.361 shares of common stock per Public Warrant. Finally, as reflected in the table above, if the Public Warrants are out of the money and about to expire, they cannot be exercised on a cashless basis in connection with a redemption by us pursuant to this redemption feature, since they will not be exercisable for any shares of common stock.

This redemption feature differs from the typical warrant redemption features used in other blank check offerings, which typically only provide for a redemption of warrants for cash (other than the Private Warrants) when the trading price for the common stock exceeds \$18.00 per share for a specified period of time.

This redemption feature is structured to allow for all of the outstanding Public Warrants to be redeemed when the common stock is trading at or above \$10.00 per share, which may be at a time when the trading price of our common stock is below the exercise price of the Public Warrants. We have established this redemption feature to provide us with the flexibility to redeem the Public Warrants without the Public Warrants having to reach the \$18.00 per share threshold set forth above under “— *Redemption of Public Warrants for cash*.” Holders choosing to exercise their Public Warrants in connection with a redemption pursuant to this feature will, in effect, receive a number of shares for their Public Warrants based on an option pricing model with a fixed volatility input as of the date of this prospectus. This redemption right provides us with an additional mechanism by which to redeem all of the outstanding Public Warrants, and therefore have certainty as to our capital structure as the Public Warrants would no longer be outstanding and would have been exercised or redeemed and we will be required to pay the redemption price to warrant holders if we choose to exercise this redemption right and it will allow us to quickly proceed with a redemption of the Public Warrants if we determine it is in our best interest to do so. As such, we would redeem the Public Warrants in this manner when we believe it is in our best interest to update our capital structure to remove the Public Warrants and pay the redemption price to the warrant holders.

As stated above, we can redeem the Public Warrants when the common stock is trading at a price starting at \$10.00, which is below the exercise price of \$11.50, because it will provide certainty with respect to our capital structure and cash position while providing warrant holders with the opportunity to exercise their Public Warrants on a cashless basis for the applicable number of shares. If we choose to redeem the Public Warrants when the common stock is trading at a price below the exercise price of the Public Warrants, this could result in the warrant holders receiving fewer common stock than they would have received if they had chosen to wait to exercise their Public Warrants for common stock if and when such Common were trading at a price higher than the exercise price of \$11.50.

No fractional shares of common stock will be issued upon exercise. If, upon exercise, a holder would be entitled to receive a fractional interest in a share, we will round down to the nearest whole number of the number of common stock to be issued to the holder. If, at the time of redemption, the Public Warrants are exercisable for a security other than the shares of common stock pursuant to the warrant agreement, the Public Warrants may be exercised for such security.

Redemption procedures and cashless exercise. If we call the Public Warrants for redemption as described above under “— *Redemption of Public Warrants for cash*,” management will have the option to require any holder that wishes to exercise his, her or its Public Warrants to do so on a “cashless basis.” In determining whether to require all holders to exercise their Public Warrants on a “cashless basis,” our management will consider, among other factors, our cash position, the number of Public Warrants that are outstanding and the dilutive effect on our stockholders of issuing the maximum number of shares of common stock issuable upon the exercise of our Public Warrants. If our management takes advantage of this option, all holders of Public Warrants would pay the exercise price by surrendering their Public Warrants for that number of shares of common stock equal to the lesser of (A) the quotient obtained by dividing (x) the product of the number of shares of common stock underlying the Public Warrants, multiplied by the excess of the “fair market value” (defined below) over the exercise price of the Public Warrants by (y) the fair market value and (B) 0.361 per Public Warrant. The “fair market value” shall mean the average last reported sale price of shares of the common stock for the 10 trading days ending on the third trading day prior to the date on which the notice of redemption is sent to the holders of Public Warrants. If our management takes advantage of this option, the notice of redemption will contain the information

necessary to calculate the number of shares of common stock to be received upon exercise of the Public Warrants, including the “fair market value” in such case. Requiring a cashless exercise in this manner will reduce the number of shares to be issued and thereby lessen the dilutive effect of a warrant redemption. We believe this feature is an attractive option to us if we do not need the cash from the exercise of the Public Warrants.

A holder of a Public Warrant may notify us in writing in the event it elects to be subject to a requirement that such holder will not have the right to exercise such Public Warrant, to the extent that after giving effect to such exercise, such person (together with such person’s affiliates), to the warrant agent’s actual knowledge, would beneficially own in excess of 9.8% (or such other amount as a holder may specify) of the shares of common stock outstanding immediately after giving effect to such exercise.

Anti-dilution Adjustments. If the number of outstanding shares of our common stock is increased by a stock dividend payable in shares of common stock to all or substantially all holders of common stock, or by a split-up of shares of common stock or other similar event, then, on the effective date of such stock dividend, split-up or similar event, the number of shares of common stock issuable on exercise of each Public Warrant will be increased in proportion to such increase in the outstanding shares of common stock. A rights offering to holders of shares of common stock entitling holders to purchase shares of common stock at a price less than the fair market value will be deemed a stock dividend of a number of shares of common stock equal to the product of (i) the number of shares of common stock actually sold in such rights offering (or issuable under any other equity securities sold in such rights offering that are convertible into or exercisable for common stock) multiplied by (ii) one (1) minus the quotient of (x) the price per share of common stock paid in such rights offering divided by (y) the fair market value. For these purposes (i) if the rights offering is for securities convertible into or exercisable for common stock, in determining the price payable for common stock, there will be taken into account any consideration received for such rights, as well as any additional amount payable upon exercise or conversion and (ii) fair market value means the volume weighted average price of common stock as reported during the ten (10) trading day period ending on the trading day prior to the first date on which the shares of common stock trade on the applicable exchange or in the applicable market, regular way, without the right to receive such rights.

In addition, if we, at any time while the Public Warrants are outstanding and unexpired, pay a dividend or make a distribution in cash, securities or other assets to all or substantially all holders of common stock on account of such shares of common stock (or other shares of our capital stock into which the Public Warrants are convertible), other than (a) as described above or (b) certain ordinary cash dividends, then the warrant exercise price will be decreased, effective immediately after the effective date of such event, by the amount of cash and/or the fair market value of any securities or other assets paid on each share of common stock in respect of such event.

If the number of outstanding shares of common stock is decreased by a consolidation, combination, reverse share split or reclassification of common stock or other similar event, then, on the effective date of such consolidation, combination, reverse share split, reclassification or similar event, the number of shares of common stock issuable on exercise of each Public Warrant will be decreased in proportion to such decrease in outstanding share of common stock.

Whenever the number of shares of common stock purchasable upon the exercise of the Public Warrants is adjusted, as described above, the warrant exercise price will be adjusted by multiplying the warrant exercise price immediately prior to such adjustment by a fraction (x) the numerator of which will be the number of shares of common stock purchasable upon the exercise of the Public Warrants immediately prior to such adjustment, and (y) the denominator of which will be the number of shares of common stock so purchasable immediately thereafter.

In case of any reclassification or reorganization of the outstanding shares of common stock (other than those described above or that solely affects the par value of such shares of common stock), or in the case of any merger or consolidation of us with or into another corporation (other than a consolidation or merger in which we are the continuing corporation and that does not result in any reclassification or reorganization of our outstanding shares of common stock), or in the case of any sale or conveyance to another corporation or entity of the assets or other property of us as an entirety or substantially as an entirety in connection with which we are dissolved, the holders of the Public Warrants will thereafter have the right to purchase and receive, upon the basis and upon the terms and conditions specified in the Public Warrants and in lieu of our shares of common stock immediately theretofore purchasable and receivable upon the exercise of the rights represented thereby, the kind and amount of shares of stock or other securities or property (including cash) receivable upon such reclassification, reorganization, merger or consolidation, or upon a dissolution following any such sale or transfer, that the holder of the Public Warrants would have received if such holder had exercised their Public Warrants immediately prior to such event. However, if such holders were entitled to exercise a right of election as to the kind or amount of securities, cash or other assets receivable upon such consolidation or merger, then the kind and amount of securities, cash or other assets for which each Public Warrant will become exercisable will be deemed to be the weighted average of the kind and amount received per share by such holders in such consolidation or merger that affirmatively make such election, and if a tender, exchange or redemption offer has been made to and accepted by such holders (other than a tender, exchange or redemption offer made by the company in connection with redemption rights held by stockholders of the company as provided for in the Company’s Certificate of Incorporation or Bylaws or as a result of the redemption of common stock by the company if a proposed initial business combination is presented to the stockholders of the company for approval) under circumstances in which, upon completion of such tender or exchange offer, the maker thereof, together with members of any group (within the meaning of Rule 13d-5(b)(1) under the Exchange Act) of which such maker is a part, and together with any affiliate or associate of such maker (within the meaning of Rule 12b-2 under the Exchange Act) and any members of any such group of which any such affiliate or associate is a part, own beneficially (within the meaning of Rule 13d-3 under the Exchange Act) more than 50% of the outstanding common stock, the holder of a Public Warrant will be entitled to receive the highest amount of cash, securities or other property to which such holder would actually have been entitled as a stockholder if such warrant holder had exercised the Public Warrant prior to the expiration of such tender or exchange offer, accepted such offer and all of the common stock held by such holder had been purchased pursuant to such tender or exchange offer, subject to adjustment (from and after the consummation of such tender or exchange offer) as nearly equivalent as possible to the adjustments provided for in the warrant agreement. Additionally, if less than 70% of the consideration receivable by the holders of common stock in such a transaction is payable in the form of common stock in the successor entity that is listed for trading on a national securities exchange or is quoted in an established over-the-counter market, or is to be so listed for trading or quoted immediately following such event, and if the registered holder of the Public Warrant properly exercises the Public Warrant within thirty days following public disclosure of such transaction, the warrant exercise price will be reduced as specified in the warrant agreement based on the per share consideration minus the Black-Scholes Warrant Value (as defined in the Warrant Agreement) of the Public Warrant.

The warrant agreement provides that the terms of the Public Warrants may be amended without the consent of any holder to cure any ambiguity or correct any defective provision, but requires the approval by the holders of at least 50% of the then outstanding Public Warrants to make any change that adversely affects the interests of the registered holders of Public Warrants.

The warrant holders do not have the rights or privileges of holders of common stock and any voting rights until they exercise their Public Warrants and receive shares of common stock. After the issuance of shares of common stock upon exercise of the Public Warrants, each holder is entitled to one vote for each share held of record on all matters to be voted on by stockholders.

The Public Warrants may be exercised upon surrender of the warrant certificate on or prior to the expiration date at the offices of the warrant agent, with the exercise form on the reverse side of the warrant certificate completed and executed as indicated, accompanied by full payment of the exercise price (or on a cashless basis, if applicable), by certified or official bank check payable to us, for the number of Public Warrants being exercised.

No fractional shares will be issued upon exercise of the Public Warrants. If, upon exercise of the Public Warrants, a holder would be entitled to receive a fractional interest

in a share, we will, upon exercise, round down to the nearest whole number the number of shares of common stock to be issued to the warrant holder.

Dividends

We have not paid any cash dividends on our common stock to date. The payment of cash dividends in the future will be dependent upon our revenues and earnings, if any, capital requirements, general financial condition, contractual restrictions and other factors that our Board may deem relevant and will be within the discretion of our Board at such time. In addition, our ability to pay dividends may be limited by covenants of any existing and future outstanding indebtedness that we or our subsidiaries incur. We do not anticipate declaring any cash dividends to holders of common stock in the foreseeable future.

Certain Anti-Takeover Provisions of Delaware Law and our Certificate of Incorporation and Bylaws

We are subject to the provisions of Section 203 of the DGCL regulating corporate takeovers. This statute prevents certain Delaware corporations, under certain circumstances, from engaging in a “business combination” with:

- a stockholder who owns 15% or more of our outstanding voting stock (otherwise known as an “interested stockholder”);
- an affiliate of an interested stockholder; or
- an associate of an interested stockholder, for three years following the date that the stockholder became an interested stockholder.

A “business combination” includes a merger or sale of more than 10% of our assets. However, the above provisions of Section 203 do not apply if:

- our Board approves the transaction that made the stockholder an “interested stockholder,” prior to the date of the transaction;
- after the completion of the transaction that resulted in the stockholder becoming an interested stockholder, that stockholder owned at least 85% of our voting stock outstanding at the time the transaction commenced, other than statutorily excluded shares of common stock; or
- on or subsequent to the date of the transaction, the business combination is approved by our Board and authorized at a meeting of our stockholders, and not by written consent, by an affirmative vote of at least two-thirds of the outstanding voting stock not owned by the interested stockholder.

Our Certificate of Incorporation provides that our Board is classified into three classes of directors. As a result, in most circumstances, a person can gain control of our Board only by successfully engaging in a proxy contest at two or more annual meetings.

Our authorized but unissued common stock and preferred stock are available for future issuances without stockholder approval and could be utilized for a variety of corporate purposes, including future offerings to raise additional capital, acquisitions and employee benefit plans. The existence of authorized but unissued and unreserved common stock and preferred stock could render more difficult or discourage an attempt to obtain control of us by means of a proxy contest, tender offer, merger or otherwise.

Exclusive forum for certain lawsuits

Our Certificate of Incorporation requires that, unless we consent in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware (the “Court of Chancery”) shall be the sole and exclusive forum for any stockholder (including a beneficial owner) to bring (i) any derivative action or proceeding brought on our behalf, (ii) any action asserting a claim of breach of a fiduciary duty owed by any director, officer or other employee to us or our stockholders, (iii) any action asserting a claim against us, our directors, officers or employees arising pursuant to any provision of the DGCL or our Certificate of Incorporation or Bylaws, or (iv) any action asserting a claim against us, our directors, officers or employees governed by the internal affairs doctrine and, if brought outside of Delaware, the stockholder bringing the suit will be deemed to have consented to service of process on such stockholder’s counsel, except any action (A) as to which the Court of Chancery of the State of Delaware determines that there is an indispensable party not subject to the jurisdiction of the Court of Chancery (and the indispensable party does not consent to the personal jurisdiction of the Court of Chancery within ten days following such determination), (B) which is vested in the exclusive jurisdiction of a court or forum other than the Court of Chancery, or (C) for which the Court of Chancery does not have subject matter jurisdiction. Although we believe this provision benefits us by providing increased consistency in the application of Delaware law in the types of lawsuits to which it applies, a court may determine that this provision is unenforceable, and to the extent it is enforceable, the provision may have the effect of discouraging lawsuits against our directors and officers, although our stockholders will not be deemed to have waived our compliance with federal securities laws and the rules and regulations promulgated thereunder.

Notwithstanding the foregoing, our Certificate of Incorporation provides that the exclusive forum provision will not apply to suits brought to enforce any liability or duty created by the Exchange Act or any other claim for which the federal courts have exclusive jurisdiction. Section 27 of the Exchange Act creates exclusive federal jurisdiction over all suits brought to enforce any duty or liability created by the Exchange Act or the rules and regulations thereunder.

Additionally, unless we consent in writing to the selection of an alternative forum, the federal district courts of the United States of America shall, to the fullest extent permitted by law, be the exclusive forum for the resolution of any complaint asserting a cause of action arising under the Securities Act against us or any of our directors, officers, other employees or agents. Section 22 of the Securities Act, however, created concurrent jurisdiction for federal and state courts over all suits brought to enforce any duty or liability created by the Securities Act or the rules and regulations thereunder. Accordingly, there is uncertainty as to whether a court would enforce these exclusive forum provisions, and the enforceability of similar choice of forum provisions in other companies’ charter documents has been challenged in legal proceedings. While the Delaware courts have determined that such exclusive forum provisions are facially valid, a stockholder may nevertheless seek to bring a claim in a venue other than those designated in the exclusive forum provisions, and there can be no assurance that such provisions will be enforced by a court in those other jurisdictions. Any person or entity purchasing or otherwise acquiring any interest in our securities shall be deemed to have notice of and consented to these provisions; however, we note that investors cannot waive compliance with the federal securities laws and the rules and regulations thereunder.

Special meeting of stockholders

Our Bylaws provide that special meetings of our stockholders may be called only by a majority vote of our Board, by our Chief Executive Officer or by our Chairman, or the Board.

Advance notice requirements for stockholder proposals and director nominations

Our Bylaws provide that stockholders seeking to bring business before our annual meeting of stockholders, or to nominate candidates for election as directors at our annual meeting of stockholders, must provide timely notice of their intent in writing. To be timely, a stockholder's notice will need to be received by the company secretary at our principal executive offices not later than the close of business on the 90th day nor earlier than the opening of business on the 120th day prior to the anniversary date of the immediately preceding annual meeting of stockholders. Pursuant to Rule 14a-8 of the Exchange Act, proposals seeking inclusion in our annual proxy statement must comply with the notice periods contained therein. Our Bylaws also specify certain requirements as to the form and content of a stockholders' meeting. These provisions may preclude our stockholders from bringing matters before our annual meeting of stockholders or from making nominations for directors at our annual meeting of stockholders.

Action by written consent

Any action required or permitted to be taken by holders of our common stock must be effected by a duly called annual or special meeting of such stockholders and may not be effected by written consent of the stockholders.

Transfer Agent

The transfer agent for our securities is Continental Stock Transfer & Trust Company. The transfer agent's address is One State Street Plaza, 30th Floor New York, New York 10004.

Listing of Securities

Our common stock and Public Warrants are currently traded on NYSE under the symbols "HLGN" and "HLGN.W", respectively.

DESCRIPTION OF DEBT SECURITIES

We may issue debt securities from time to time, in one or more series, as either senior or subordinated debt or as senior or subordinated convertible debt. While the terms we have summarized below will apply generally to any debt securities that we may offer under this prospectus, we will describe the particular terms of any debt securities that we may offer in more detail in the applicable prospectus supplement. The terms of any debt securities offered under a prospectus supplement may differ from the terms described below. Unless the context requires otherwise, whenever we refer to the indenture, we also are referring to any supplemental indentures that specify the terms of a particular series of debt securities.

We will issue the debt securities under the indenture that we will enter into with the trustee named in the indenture. The indenture will be qualified under the Trust Indenture Act of 1939, as amended, or the Trust Indenture Act. We have filed the form of indenture as an exhibit to the registration statement of which this prospectus is a part, and supplemental indentures and forms of debt securities containing the terms of the debt securities being offered will be filed as exhibits to the registration statement of which this prospectus is a part or will be incorporated by reference from reports that we file with the SEC.

The following summary of material provisions of the debt securities and the indenture is subject to, and qualified in its entirety by reference to, all of the provisions of the indenture applicable to a particular series of debt securities. We urge you to read the applicable prospectus supplements and any related free writing prospectuses related to the debt securities that we may offer under this prospectus, as well as the complete indenture that contains the terms of the debt securities.

General

The indenture does not limit the amount of debt securities that we may issue. It provides that we may issue debt securities up to the principal amount that we may authorize and may be in any currency or currency unit that we may designate. Except for the limitations on consolidation, merger and sale of all or substantially all of our assets contained in the indenture, the terms of the indenture do not contain any covenants or other provisions designed to give holders of any debt securities protection against changes in our operations, financial condition or transactions involving us.

We may issue the debt securities issued under the indenture as "discount securities," which means they may be sold at a discount below their stated principal amount. These debt securities, as well as other debt securities that are not issued at a discount, may be issued with "original issue discount," or OID, for U.S. federal income tax purposes because of interest payment and other characteristics or terms of the debt securities. Material U.S. federal income tax considerations applicable to debt securities issued with OID will be described in more detail in any applicable prospectus supplement.

We will describe in the applicable prospectus supplement the terms of the series of debt securities being offered, including:

- the title of the series of debt securities;
- any limit upon the aggregate principal amount that may be issued;
- the maturity date or dates;
- the form of the debt securities of the series;
- the applicability of any guarantees;
- whether or not the debt securities will be secured or unsecured, and the terms of any secured debt;

- whether the debt securities rank as senior debt, senior subordinated debt, subordinated debt or any combination thereof, and the terms of any subordination;
- if the price (expressed as a percentage of the aggregate principal amount thereof) at which such debt securities will be issued is a price other than the principal amount thereof, the portion of the principal amount thereof payable upon declaration of acceleration of the maturity thereof, or if applicable, the portion of the principal amount of such debt securities that is convertible into another security or the method by which any such portion shall be determined;
- the interest rate or rates, which may be fixed or variable, or the method for determining the rate and the date interest will begin to accrue, the dates interest will be payable and the regular record dates for interest payment dates or the method for determining such dates;

- our right, if any, to defer payment of interest and the maximum length of any such deferral period;
- if applicable, the date or dates after which, or the period or periods during which, and the price or prices at which, we may, at our option, redeem the series of debt securities pursuant to any optional or provisional redemption provisions and the terms of those redemption provisions;
- the date or dates, if any, on which, and the price or prices at which we are obligated, pursuant to any mandatory sinking fund or analogous fund provisions or otherwise, to redeem, or at the holder's option to purchase, the series of debt securities and the currency or currency unit in which the debt securities are payable;
- the denominations in which we will issue the series of debt securities, if other than denominations of \$1,000 and any integral multiple thereof;
- any and all terms, if applicable, relating to any auction or remarketing of the debt securities of that series and any security for our obligations with respect to such debt securities and any other terms which may be advisable in connection with the marketing of debt securities of that series;
- whether the debt securities of the series shall be issued in whole or in part in the form of a global security or securities;
- the terms and conditions, if any, upon which such global security or securities may be exchanged in whole or in part for other individual securities; and the depositary for such global security or securities;
- if applicable, the provisions relating to conversion or exchange of any debt securities of the series and the terms and conditions upon which such debt securities will be so convertible or exchangeable, including the conversion or exchange price, as applicable, or how it will be calculated and may be adjusted, any mandatory or optional (at our option or the holders' option) conversion or exchange features, the applicable conversion or exchange period and the manner of settlement for any conversion or exchange;
- if other than the full principal amount thereof, the portion of the principal amount of debt securities of the series which shall be payable upon declaration of acceleration of the maturity thereof;
- additions to or changes in the covenants applicable to the particular debt securities being issued, including, among others, the consolidation, merger or sale covenant;
- additions to or changes in the events of default with respect to the securities and any change in the right of the trustee or the holders to declare the principal, premium, if any, and interest, if any, with respect to such securities to be due and payable;
- additions to or changes in or deletions of the provisions relating to covenant defeasance and legal defeasance;
- additions to or changes in the provisions relating to satisfaction and discharge of the indenture;

- additions to or changes in the provisions relating to the modification of the indenture both with and without the consent of holders of debt securities issued under the indenture;
- the currency of payment of debt securities if other than U.S. dollars and the manner of determining the equivalent amount in U.S. dollars;
- whether interest will be payable in cash or additional debt securities at our or the holders' option and the terms and conditions upon which the election may be made;
- the terms and conditions, if any, upon which we will pay amounts in addition to the stated interest, premium, if any and principal amounts of the debt securities of the series to any holder that is not a "United States person" for federal tax purposes;
- any restrictions on transfer, sale or assignment of the debt securities of the series; and
- any other specific terms, preferences, rights or limitations of, or restrictions on, the debt securities, any other additions or changes in the provisions of the indenture, and any terms that may be required by us or advisable under applicable laws or regulations.

Conversion or Exchange Rights

We will set forth in the applicable prospectus supplement the terms on which a series of debt securities may be convertible into or exchangeable for our common stock or our other securities. We will include provisions as to settlement upon conversion or exchange and whether conversion or exchange is mandatory, at the option of the holder or at our option. We may include provisions pursuant to which the number of shares of our common stock or our other securities that the holders of the series of debt securities receive would be subject to adjustment.

Consolidation, Merger or Sale

Unless we provide otherwise in the prospectus supplement applicable to a particular series of debt securities, the indenture will not contain any covenant that restricts our ability to merge or consolidate, or sell, convey, transfer or otherwise dispose of our assets as an entirety or substantially as an entirety. However, any successor to or acquirer of such assets (other than a subsidiary of ours) must assume all of our obligations under the indenture or the debt securities, as appropriate.

Events of Default under the Indenture

Unless we provide otherwise in the prospectus supplement applicable to a particular series of debt securities, the following are events of default under the indenture with respect to any series of debt securities that we may issue:

- if we fail to pay any installment of interest on any series of debt securities, as and when the same shall become due and payable, and such default continues for a period of 90 days; provided, however, that a valid extension of an interest payment period by us in accordance with the terms of any indenture supplemental thereto shall not constitute a default in the payment of interest for this purpose;
- if we fail to pay the principal of, or premium, if any, on any series of debt securities as and when the same shall become due and payable whether at maturity, upon redemption, by declaration or otherwise, or in any payment required by any sinking or analogous fund established with respect to such series; provided, however, that a valid extension of the maturity of such debt securities in accordance with the terms of any indenture supplemental thereto shall not constitute a default in the payment of principal or premium, if any;

- if we fail to observe or perform any other covenant or agreement contained in the debt securities or the indenture, other than a covenant specifically relating to another series of debt securities, and our failure continues for 90 days after we receive written notice of such failure, requiring the same to be remedied and stating that such is a notice of default thereunder, from the trustee or holders of at least 25% in aggregate principal amount of the outstanding debt securities of the applicable series; and
- if specified events of bankruptcy, insolvency or reorganization occur.

If an event of default with respect to debt securities of any series occurs and is continuing, other than an event of default specified in the last bullet point above, the trustee or the holders of at least 25% in aggregate principal amount of the outstanding debt securities of that series, by notice to us in writing, and to the trustee if notice is given by such holders, may declare the unpaid principal of, premium, if any, and accrued interest, if any, due and payable immediately. If an event of default specified in the last bullet point above occurs with respect to us, the principal amount of and accrued interest, if any, of each issue of debt securities then outstanding shall be due and payable without any notice or other action on the part of the trustee or any holder.

The holders of a majority in principal amount of the outstanding debt securities of an affected series may waive any default or event of default with respect to the series and its consequences, except defaults or events of default regarding payment of principal, premium, if any, or interest, unless we have cured the default or event of default in accordance with the indenture. Any waiver shall cure the default or event of default.

Subject to the terms of the indenture, if an event of default under an indenture shall occur and be continuing, the trustee will be under no obligation to exercise any of its rights or powers under such indenture at the request or direction of any of the holders of the applicable series of debt securities, unless such holders have offered the trustee reasonable indemnity. The holders of a majority in principal amount of the outstanding debt securities of any series will have the right to direct the time, method and place of conducting any proceeding for any remedy available to the trustee, or exercising any trust or power conferred on the trustee, with respect to the debt securities of that series, provided that:

- the direction so given by the holder is not in conflict with any law or the applicable indenture; and
- subject to its duties under the Trust Indenture Act, the trustee need not take any action that might involve it in personal liability or might be unduly prejudicial to the holders not involved in the proceeding.

A holder of the debt securities of any series will have the right to institute a proceeding under the indenture or to appoint a receiver or trustee, or to seek other remedies only if:

- the holder has given written notice to the trustee of a continuing event of default with respect to that series;
- the holders of at least 25% in aggregate principal amount of the outstanding debt securities of that series have made written request;
- such holders have offered to the trustee indemnity satisfactory to it against the costs, expenses and liabilities to be incurred by the trustee in compliance with the request; and
- the trustee does not institute the proceeding, and does not receive from the holders of a majority in aggregate principal amount of the outstanding debt securities of that series other conflicting directions within 90 days after the notice, request and offer.

These limitations do not apply to a suit instituted by a holder of debt securities if we default in the payment of the principal, premium, if any, or interest on, the debt securities.

We will periodically file statements with the trustee regarding our compliance with specified covenants in the indenture.

Modification of Indenture; Waiver

We and the trustee may change an indenture without the consent of any holders with respect to specific matters:

- to cure any ambiguity, defect or inconsistency in the indenture or in the debt securities of any series;
- to comply with the provisions described above under "*Description of Debt Securities—Consolidation, Merger or Sale*";
- to provide for uncertificated debt securities in addition to or in place of certificated debt securities;

- to add to our covenants, restrictions, conditions or provisions such new covenants, restrictions, conditions or provisions for the benefit of the holders of all or any series of debt securities, to make the occurrence, or the occurrence and the continuance, of a default in any such additional covenants, restrictions, conditions or provisions an event of default or to surrender any right or power conferred upon us in the indenture;
- to add to, delete from or revise the conditions, limitations, and restrictions on the authorized amount, terms, or purposes of issue, authentication and delivery of debt securities, as set forth in the indenture;
- to make any change that does not adversely affect the interests of any holder of debt securities of any series in any material respect;
- to provide for the issuance of and establish the form and terms and conditions of the debt securities of any series as provided above under "*Description of Debt Securities—General*" to establish the form of any certifications required to be furnished pursuant to the terms of the indenture or any series of debt securities, or to add to the rights of the holders of any series of debt securities;
- to evidence and provide for the acceptance of appointment under any indenture by a successor trustee; or
- to comply with any requirements of the SEC in connection with the qualification of any indenture under the Trust Indenture Act.

In addition, under the indenture, the rights of holders of a series of debt securities may be changed by us and the trustee with the written consent of the holders of at least a majority in aggregate principal amount of the outstanding debt securities of each series that is affected. However, unless we provide otherwise in the prospectus supplement applicable to a particular series of debt securities, we and the trustee may make the following changes only with the consent of each holder of any outstanding debt securities affected:

- extending the fixed maturity of any debt securities of any series;
- reducing the principal amount, reducing the rate of or extending the time of payment of interest, or reducing any premium payable upon the redemption of any series of any debt securities; or
- reducing the percentage of debt securities, the holders of which are required to consent to any amendment, supplement, modification or waiver.

Discharge

Each indenture provides that we can elect to be discharged from our obligations with respect to one or more series of debt securities, except for specified obligations, including obligations to:

- provide for payment;
- register the transfer or exchange of debt securities of the series;
- replace stolen, lost or mutilated debt securities of the series;
- pay principal of and premium and interest on any debt securities of the series;
- maintain paying agencies;
- hold monies for payment in trust;
- recover excess money held by the trustee;
- compensate and indemnify the trustee; and
- appoint any successor trustee.

In order to exercise our rights to be discharged, we must deposit with the trustee money or government obligations sufficient to pay all the principal of, any premium, if any, and interest on, the debt securities of the series on the dates payments are due.

Form, Exchange and Transfer

We will issue the debt securities of each series only in fully registered form without coupons and, unless we provide otherwise in the applicable prospectus supplement, in denominations of \$1,000 and any integral multiple thereof. The indenture provides that we may issue debt securities of a series in temporary or permanent global form and as book-entry securities that will be deposited with, or on behalf of, The Depository Trust Company, or DTC, or another depository named by us and identified in the applicable prospectus supplement with respect to that series. To the extent the debt securities of a series are issued in global form and as book-entry, a description of terms relating to any book-entry securities will be set forth in the applicable prospectus supplement.

At the option of the holder, subject to the terms of the indenture and the limitations applicable to global securities described in the applicable prospectus supplement, the holder of the debt securities of any series can exchange the debt securities for other debt securities of the same series, in any authorized denomination and of like tenor and aggregate principal amount.

Subject to the terms of the indenture and the limitations applicable to global securities set forth in the applicable prospectus supplement, holders of the debt securities may present the debt securities for exchange or for registration of transfer, duly endorsed or with the form of transfer endorsed thereon duly executed if so required by us or the security registrar, at the office of the security registrar or at the office of any transfer agent designated by us for this purpose. Unless otherwise provided in the debt securities that the holder presents for transfer or exchange, we will impose no service charge for any registration of transfer or exchange, but we may require payment of any taxes or other governmental charges.

We will name in the applicable prospectus supplement the security registrar, and any transfer agent in addition to the security registrar, that we initially designate for any debt securities. We may at any time designate additional transfer agents or rescind the designation of any transfer agent or approve a change in the office through which any transfer agent acts, except that we will be required to maintain a transfer agent in each place of payment for the debt securities of each series.

If we elect to redeem the debt securities of any series, we will not be required to:

- issue, register the transfer of, or exchange any debt securities of that series during a period beginning at the opening of business 15 days before the day of mailing of a notice of redemption of any debt securities that may be selected for redemption and ending at the close of business on the day of the mailing; or
- register the transfer of or exchange any debt securities so selected for redemption, in whole or in part, except the unredeemed portion of any debt securities we are redeeming in part.

Information Concerning the Trustee

The trustee, other than during the occurrence and continuance of an event of default under an indenture, undertakes to perform only those duties as are specifically set forth in the applicable indenture. Upon an event of default under an indenture, the trustee must use the same degree of care as a prudent person would exercise or use in the conduct of his or her own affairs. Subject to this provision, the trustee is under no obligation to exercise any of the powers given it by the indenture at the request of any holder of debt

securities unless it is offered reasonable security and indemnity against the costs, expenses and liabilities that it might incur.

Payment and Paying Agents

Unless we otherwise indicate in the applicable prospectus supplement, we will make payment of the interest on any debt securities on any interest payment date to the person in whose name the debt securities, or one or more predecessor securities, are registered at the close of business on the regular record date for the interest.

We will pay principal of and any premium and interest on the debt securities of a particular series at the office of the paying agents designated by us, except that unless we otherwise indicate in the applicable prospectus supplement, we will make interest payments by check that we will mail to the holder or by wire transfer to certain holders. Unless we otherwise indicate in the applicable prospectus supplement, we will designate the corporate trust office of the trustee as our sole paying agent for payments with respect to debt securities of each series. We will name in the applicable prospectus supplement any other paying agents that we initially designate for the debt securities of a particular series. We will maintain a paying agent in each place of payment for the debt securities of a particular series.

All money we pay to a paying agent or the trustee for the payment of the principal of or any premium or interest on any debt securities that remains unclaimed at the end of two years after such principal, premium or interest has become due and payable will be repaid to us, and the holder of the debt security thereafter may look only to us for payment thereof.

Governing Law

The indenture and the debt securities will be governed by and construed in accordance with the internal laws of the State of New York, except to the extent that the Trust Indenture Act is applicable.

DESCRIPTION OF WARRANTS

The following description, together with the additional information we may include in any applicable prospectus supplement and free writing prospectus, summarizes the material terms and provisions of the warrants that we may offer under this prospectus, which may consist of warrants to purchase common stock, preferred stock or debt securities and may be issued in one or more series. Warrants may be offered independently or in combination with common stock, preferred stock or debt securities offered by any prospectus supplement. While the terms we have summarized below will apply generally to any warrants that we may offer under this prospectus, we will describe the particular terms of any series of warrants in more detail in the applicable prospectus supplement. The following description of warrants will apply to the warrants offered by this prospectus unless we provide otherwise in the applicable prospectus supplement. The applicable prospectus supplement for a particular series of warrants may specify different or additional terms.

We will file as exhibits to the registration statement of which this prospectus is a part, or will incorporate by reference from reports that we file with the SEC, the form of warrant and/or the warrant agreement and warrant certificate, as applicable, that contain the terms of the particular series of warrants we are offering, and any supplemental agreements, before the issuance of such warrants. The following summaries of material terms and provisions of the warrants are subject to, and qualified in their entirety by reference to, all the provisions of the warrant agreement and warrant certificate, as applicable, and any supplemental agreements applicable to a particular series of warrants that we may offer under this prospectus. We urge you to read the applicable prospectus supplement related to the particular series of warrants that we may offer under this prospectus, as well as any related free writing prospectus, and the complete warrant agreement and warrant certificate, as applicable, and any supplemental agreements, that contain the terms of the warrants.

General

We will describe in the applicable prospectus supplement the terms of the series of warrants being offered, including:

- the offering price and aggregate number of warrants offered;
- the currency for which the warrants may be purchased;
- if applicable, the designation and terms of the securities with which the warrants are issued and the number of warrants issued with each such security or each principal amount of such security;
- in the case of warrants to purchase debt securities, the principal amount of debt securities purchasable upon exercise of one warrant and the price at, and currency in which, this principal amount of debt securities may be purchased upon such exercise;
- in the case of warrants to purchase common stock or preferred stock, the number of shares of common stock or preferred stock, as the case may be, purchasable upon the exercise of one warrant and the price at which these shares may be purchased upon such exercise;
- the effect of any merger, consolidation, sale or other disposition of our business on the warrant agreements and the warrants;
- the terms of any rights to redeem or call the warrants;
- the terms of any rights to force exercise of the warrants;
- any provisions for changes to or adjustments in the exercise price or number of securities issuable upon exercise of the warrants;
- the dates on which the right to exercise the warrants will commence and expire;
- the manner in which the warrant agreements and warrants may be modified;

- a discussion of any material or special U.S. federal income tax considerations of holding or exercising the warrants;
- the terms of the securities issuable upon exercise of the warrants; and

- any other specific terms, preferences, rights or limitations of or restrictions on the warrants.
- Before exercising their warrants, holders of warrants will not have any of the rights of holders of the securities purchasable upon such exercise, including:
- in the case of warrants to purchase debt securities, the right to receive payments of principal of, or premium, if any, or interest on, the debt securities purchasable upon exercise or to enforce covenants in the applicable indenture; or
- in the case of warrants to purchase common stock or preferred stock, the right to receive dividends, if any, or, payments upon our liquidation, dissolution or winding up or to exercise voting rights, if any.

Exercise of Warrants

Each warrant will entitle the holder to purchase the securities that we specify in the applicable prospectus supplement at the exercise price that we describe in the applicable prospectus supplement. The warrants may be exercised as set forth in the prospectus supplement relating to the warrants offered. Unless we otherwise specify in the applicable prospectus supplement, warrants may be exercised at any time up to the close of business on the expiration date set forth in the prospectus supplement relating to the warrants offered thereby. After the close of business on the expiration date, unexercised warrants will become void.

Upon receipt of payment and the warrant or warrant certificate, as applicable, properly completed and duly executed at the corporate trust office of the warrant agent, if any, or any other office, including ours, indicated in the prospectus supplement, we will, as soon as practicable, issue and deliver the securities purchasable upon such exercise. If less than all of the warrants (or the warrants represented by such warrant certificate) are exercised, a new warrant or a new warrant certificate, as applicable, will be issued for the remaining warrants.

Governing Law

Unless we otherwise specify in the applicable prospectus supplement, the warrants and any warrant agreements will be governed by and construed in accordance with the laws of the State of New York.

Enforceability of Rights by Holders of Warrants

Each warrant agent, if any, will act solely as our agent under the applicable warrant agreement and will not assume any obligation or relationship of agency or trust with any holder of any warrant. A single bank or trust company may act as warrant agent for more than one issue of warrants. A warrant agent will have no duty or responsibility in case of any default by us under the applicable warrant agreement or warrant, including any duty or responsibility to initiate any proceedings at law or otherwise, or to make any demand upon us. Any holder of a warrant may, without the consent of the related warrant agent or the holder of any other warrant, enforce by appropriate legal action its right to exercise, and receive the securities purchasable upon exercise of, its warrants.

DESCRIPTION OF RIGHTS

The following description, together with the additional information we include in any applicable prospectus supplement, summarizes the general features of the rights that we may offer under this prospectus. We may issue rights to our stockholders to purchase shares of our common stock, preferred stock and/or any of the other securities offered hereby. Each series of rights will be issued under a separate rights agreement to be entered into between us and a bank or trust company, as rights agent. When we issue rights, we will provide the specific terms of the rights and the applicable rights agreement in a prospectus supplement. Because the terms of any rights we offer under a prospectus supplement may differ from the terms we describe below, you should rely solely on information in the applicable prospectus supplement if that summary is different from the summary in this prospectus. We will incorporate by reference into the registration statement of which this prospectus is a part the form of rights agreement that describes the terms of the series of rights we are offering before the issuance of the related series of rights. As of the date of this prospectus, we had no rights outstanding.

We may issue any series of rights, certain terms of that series of rights will be described in the applicable prospectus supplement, including, without limitation, the following:

- the date of determining the stockholders entitled to the rights distribution;
- the securities purchasable upon exercise of the rights;
- the exercise price;
- the aggregate number of rights issued;
- the date, if any, on and after which the rights will be separately transferable;
- the date on which the right to exercise the rights will commence, and the date on which the right will expire;
- a discussion of certain United States federal income tax considerations applicable to the rights; and
- any other terms of the rights, including terms, procedures and limitations relating to the distribution, exchange and exercise of the rights.

Each right will entitle the holder of rights to purchase for cash the securities at the exercise price provided in the applicable prospectus supplement. Rights may be exercised at any time up to the close of business on the expiration date for the rights provided in the applicable prospectus supplement. After the close of business on the expiration date, all unexercised rights will be void.

Holders may exercise rights as described in the applicable prospectus supplement. Upon receipt of payment and the rights certificate properly completed and duly executed at the corporate trust office of the rights agent or any other office indicated in the prospectus supplement, we will, as soon as practicable, forward the securities purchasable upon exercise of the rights. If less than all of the rights issued in any rights offering are exercised, we may offer any unsubscribed securities directly to persons other than stockholders, to or through agents, underwriters or dealers or through a combination of such methods, including pursuant to standby underwriting arrangements, as described in the applicable prospectus supplement.

Governing Law

Unless we otherwise specify in the applicable prospectus supplement, the rights and any rights agreements will be governed by and construed in accordance with the laws of the State of New York.

DESCRIPTION OF UNITS

The following description, together with the additional information we include in any applicable prospectus supplement, summarizes the general features of the units that we may offer under this prospectus. We may issue units consisting of two or more other constituent securities offered hereby. These units may be issuable as, and for a specified period of time may be transferable only as a single security, rather than as the separate constituent securities comprising such units. Units will be issued pursuant to one or more unit agreements to be entered into between us and a bank or trust company, as unit agent. While the features we have summarized below will generally apply to any units we may offer under this prospectus, we will describe the particular terms of any units that we may offer in more detail in the applicable prospectus supplement. The specific terms of any units may differ from the description provided below as a result of negotiations with third parties in connection with the issuance of those units, as well as for other reasons. Because the terms of any units we offer under a prospectus supplement may differ from the terms we describe below, you should rely solely on information in the applicable prospectus supplement if that summary is different from the summary in this prospectus.

We urge you to read the applicable prospectus supplement related to the specific units being offered, as well as the complete instruments that contain the terms of the securities that comprise those units. Certain of those instruments, or forms of those instruments, have been, or will be, filed as exhibits to the registration statement of which this prospectus is a part, and supplements to those instruments or forms may be incorporated by reference into the registration statement of which this prospectus is a part from reports we file with the SEC.

If we offer any units, certain terms of that series of units will be described in the applicable prospectus supplement, including, without limitation, the following, as applicable:

- the title of the series of units;
- identification and description of the separate constituent securities comprising the units;
- the price or prices at which the units will be issued;
- the date, if any, on and after which the constituent securities comprising the units will be separately transferable;
- a discussion of certain United States federal income tax considerations applicable to the units; and
- any other terms of the units and their constituent securities.

Governing Law

Unless we otherwise specify in the applicable prospectus supplement, the units and any unit agreements will be governed by and construed in accordance with the laws of the State of New York.

LEGAL OWNERSHIP OF SECURITIES

We may issue securities in registered form or in the form of one or more global securities. We describe global securities in greater detail below. We refer to those persons who have securities registered in their own names on the books that we or any applicable trustee, depository or warrant agent maintain for this purpose as the “holders” of those securities. These persons are the legal holders of the securities. We refer to those persons who, indirectly through others, own beneficial interests in securities that are not registered in their own names, as “indirect holders” of those securities. As we discuss below, indirect holders are not legal holders, and investors in securities issued in book-entry form or in street name will be indirect holders.

Book-Entry Holders

We may issue securities in book-entry form only, as we will specify in the applicable prospectus supplement. This means securities may be represented by one or more global securities registered in the name of a financial institution that holds them as depository on behalf of other financial institutions that participate in the depository’s book-entry system. These participating institutions, which are referred to as participants, in turn, hold beneficial interests in the securities on behalf of themselves or their customers.

Only the person in whose name a security is registered is recognized as the holder of that security. Securities issued in global form will be registered in the name of the depository or its participants. Consequently, for securities issued in global form, we will recognize only the depository as the holder of the securities, and we will make all payments on the securities to the depository. The depository passes along the payments it receives to its participants, which in turn pass the payments along to their customers who are the beneficial owners. The depository and its participants do so under agreements they have made with one another or with their customers; they are not obligated to do so under the terms of the securities.

As a result, investors in a book-entry security will not own securities directly. Instead, they will own beneficial interests in a global security, through a bank, broker or other financial institution that participates in the depository’s book-entry system or holds an interest through a participant. As long as the securities are issued in global form, investors will be indirect holders, and not holders, of the securities.

Street Name Holders

We may terminate a global security or issue securities in non-global form. In these cases, investors may choose to hold their securities in their own names or in “street name.” Securities held by an investor in street name would be registered in the name of a bank, broker or other financial institution that the investor chooses, and the investor would hold only a beneficial interest in those securities through an account he or she maintains at that institution.

For securities held in street name, we or any applicable trustee or depository will recognize only the intermediary banks, brokers and other financial institutions in whose names the securities are registered as the holders of those securities, and we or any such trustee or depository will make all payments on those securities to them. These institutions pass along the payments they receive to their customers who are the beneficial owners, but only because they agree to do so in their customer agreements or because they are legally required to do so. Investors who hold securities in street name will be indirect holders, not holders, of those securities.

Legal Holders

Our obligations, as well as the obligations of any applicable trustee and of any third parties employed by us or a trustee, run only to the legal holders of the securities. We do not have obligations to investors who hold beneficial interests in global securities, in street name or by any other indirect means. This will be the case whether an investor chooses to be an indirect holder of a security or has no choice because we are issuing the securities only in global form.

For example, once we make a payment or give a notice to the holder, we have no further responsibility for the payment or notice even if that holder is required, under agreements with depository participants or customers or by law, to pass it along to the indirect holders but does not do so. Similarly, we may want to obtain the approval of the holders to amend an indenture, to relieve us of the consequences of a default or of our obligation to comply with a particular provision of the indenture or for other purposes. In such an event, we would seek approval only from the holders, and not the indirect holders, of the securities. Whether and how the holders contact the indirect holders is up to the holders.

Special Considerations for Indirect Holders

If you hold securities through a bank, broker or other financial institution, either in book-entry form or in street name, you should check with your own institution to find out:

- the performance of third-party service providers;
- how it handles securities payments and notices;
- whether it imposes fees or charges;
- how it would handle a request for the holders' consent, if ever required;
- whether and how you can instruct it to send you securities registered in your own name so you can be a holder, if that is permitted in the future;
- how it would exercise rights under the securities if there were a default or other event triggering the need for holders to act to protect their interests; and
- if the securities are in book-entry form, how the depository's rules and procedures will affect these matters.

Global Securities

A global security is a security that represents one or any other number of individual securities held by a depository. Generally, all securities represented by the same global securities will have the same terms.

Each security issued in book-entry form will be represented by a global security that we deposit with and register in the name of a financial institution or its nominee that we select. The financial institution that we select for this purpose is called the depository. Unless we specify otherwise in the applicable prospectus supplement, DTC will be the depository for all securities issued in book-entry form.

A global security may not be transferred to or registered in the name of anyone other than the depository, its nominee or a successor depository, unless special termination situations arise. We describe those situations below under the section titled "*Special Situations When a Global Security Will Be Terminated*" in this prospectus. As a result of these arrangements, the depository, or its nominee, will be the sole registered owner and holder of all securities represented by a global security, and investors will be permitted to own only beneficial interests in a global security. Beneficial interests must be held by means of an account with a broker, bank or other financial institution that in turn has an account with the depository or with another institution that does. Thus, an investor whose security is represented by a global security will not be a holder of the security, but only an indirect holder of a beneficial interest in the global security.

If the prospectus supplement for a particular security indicates that the security will be issued in global form only, then the security will be represented by a global security at all times unless and until the global security is terminated. If termination occurs, we may issue the securities through another book-entry clearing system or decide that the securities may no longer be held through any book-entry clearing system.

Special Considerations for Global Securities

The rights of an indirect holder relating to a global security will be governed by the account rules of the investor's financial institution and of the depository, as well as general laws relating to securities transfers. We do not recognize an indirect holder as a holder of securities and instead deal only with the depository that holds the global security.

If securities are issued only in the form of a global security, an investor should be aware of the following:

- an investor cannot cause the securities to be registered in his or her name, and cannot obtain non-global certificates for his or her interest in the securities, except in the special situations we describe below;
- an investor will be an indirect holder and must look to his or her own bank or broker for payments on the securities and protection of his or her legal rights relating to the securities, as we describe above;
- an investor may not be able to sell interests in the securities to some insurance companies and to other institutions that are required by law to own their securities in non-book-entry form;
- an investor may not be able to pledge his or her interest in a global security in circumstances where certificates representing the securities must be delivered to the lender or other beneficiary of the pledge in order for the pledge to be effective;
- the depository's policies, which may change from time to time, will govern payments, transfers, exchanges and other matters relating to an investor's interest in a global security;

- we and any applicable trustee have no responsibility for any aspect of the depository's actions or for its records of ownership interests in a global security, nor do we or any applicable trustee supervise the depository in any way;
- the depository may, and we understand that DTC will, require that those who purchase and sell interests in a global security within its book-entry system use immediately available funds, and your broker or bank may require you to do so as well; and
- financial institutions that participate in the depository's book-entry system, and through which an investor holds its interest in a global security, may also have their own policies affecting payments, notices and other matters relating to the securities.

There may be more than one financial intermediary in the chain of ownership for an investor. We do not monitor and are not responsible for the actions of any of those intermediaries.

Special Situations When a Global Security Will Be Terminated

In a few special situations described below, the global security will terminate and interests in it will be exchanged for physical certificates representing those interests. After that exchange, the choice of whether to hold securities directly or in street name will be up to the investor. Investors must consult their own banks or brokers to find out how to have their interests in securities transferred to their own name, so that they will be direct holders. We have described the rights of holders and street name investors above.

Unless we provide otherwise in the applicable prospectus supplement, the global security will terminate when the following special situations occur:

- if the depository notifies us that it is unwilling, unable or no longer qualified to continue as depository for that global security and we do not appoint another institution to act as depository within 90 days;
- if we notify any applicable trustee that we wish to terminate that global security; or
- if an event of default has occurred with regard to securities represented by that global security and has not been cured or waived.

The applicable prospectus supplement may also list additional situations for terminating a global security that would apply only to the particular series of securities covered by the applicable prospectus supplement. When a global security terminates, the depository, and not we or any applicable trustee, is responsible for deciding the names of the institutions that will be the initial direct holders.

SELLING SECURITYHOLDERS

The Selling Securityholders acquired the Private Warrants and shares of our common stock from us in private offerings pursuant to exemptions from registration under Section 4(a)(2) of the Securities Act in connection with a private placement concurrent with the initial public offering of Athena and in connection with the Business Combination. Pursuant to certain contractual arrangements, we agreed to file a registration statement with the SEC for the purposes of registering for resale (i) the Private Warrants (and the shares of common stock issuable upon the exercise of the Private Warrants) and (ii) the shares of our common stock issued to the Selling Securityholders. Our registration of the securities covered by this prospectus does not mean that the Selling Securityholders will in fact offer or sell any or all of the shares of common stock or Warrants. In addition, the Selling Securityholders may sell, transfer or otherwise dispose of, at any time and from time to time, the common stock or Warrants covered by this prospectus in transactions exemption from the requirements of the Securities Act after the date of this prospectus. The Selling Securityholders may offer, sell or distribute all or a portion of their shares of common stock or Warrants publicly or through private transactions at prevailing market prices or at negotiated prices.

Except as set forth in the footnotes below, the following table sets forth, based on written representations from the Selling Securityholders, certain information as of May 8, 2023 regarding the beneficial ownership of our common stock and Warrants by the Selling Securityholders and the shares of common stock and Warrants being offered by the Selling Securityholders. The applicable percentage ownership of common stock is based on the sum of 196,895,138 shares of common stock issued and outstanding as of May 8, 2023. Unless otherwise noted in the footnotes to the following table, and subject to applicable community property laws, the persons and entities named in the table have sole voting and investment power with respect to their beneficially owned common stock.

Information with respect to shares of our common stock and the Private Warrants owned beneficially after the offering assumes the sale of all of the shares of our common stock and the Private Warrants offered and no other purchases or sales of shares of our common stock or Private Warrants. The Selling Securityholders may offer and sell some, all or none of their shares of our common stock or Private Warrants, as applicable.

We have determined beneficial ownership in accordance with the rules of the SEC. Except as indicated by the footnotes below, we believe, based on the information furnished to us, that the Selling Securityholders have sole voting and investment power with respect to all shares of common stock and Warrants that they beneficially own, subject to applicable community property laws. Except as otherwise described below, based on the information provided to us by the Selling Securityholders, no Selling Securityholder is a broker-dealer or an affiliate of a broker-dealer.

Except as set forth in the footnotes below, (i) the following table does not include up to 8,333,333 shares of common stock issuable upon the exercise of the Public Warrants and (ii) the address of each selling securityholder is 130 West Union St., Pasadena, California 91103.

Please see the section titled "Plan of Distribution" for further information regarding the stockholders' method of distributing these shares.

Name of Selling Securityholder	Number of Shares of Common Stock Beneficially Owned	Warrants Beneficially Owned Prior to Offering	Number of Shares of Common Stock Being Offered	Number of Warrants Being Offered	Shares of Common Stock Beneficially Owned After the Offered Shares of Common Stock are Sold		Warrants Beneficially Owned After the Offered Warrants are Sold	
	Owned	Offering	Offered	Offered	Number	Percent	Number	Percent
ArcelorMittal XCarb S.à.r.l. ⁽¹⁾	3,406,516	—	1,000,000	—	2,406,516	1.2%	—	—
Flying Point LLC ⁽²⁾	200,000	—	200,000	—	—	—	—	—
Saba Capital Master Fund, Ltd ⁽³⁾	126,243	—	126,243	—	—	—	—	—
University of Wyoming Foundation	100,000	—	100,000	—	—	—	—	—

Virya, LLC ⁽⁴⁾	300,000	—	300,000	—	—	—	—	—
Annette L. Nazareth	33,428	—	33,428	—	—	—	—	—
Bill Gross ⁽⁵⁾	27,014,420	—	6,835,995	—	20,178,425	10.3%	—	—
Blue Monarch Investments LLC ⁽⁶⁾	15,000	—	15,000	—	—	—	—	—
Brockington Hall, LLC ⁽⁷⁾	15,000	—	15,000	—	—	—	—	—
Ciara Bunham	5,714	—	5,714	—	—	—	—	—
Cynasure Holdings LLC ⁽⁸⁾	17,142	—	17,142	—	—	—	—	—
Deborah Chen	196,687	—	126,559	—	70,128	*0%	—	—
Devon Pike	5,714	—	5,714	—	—	—	—	—
Grace Vandecruze	75,000	—	75,000	—	—	—	—	—
Idealab Holdings, LLC ⁽⁹⁾	15,341,231	—	15,341,231	—	—	—	—	—
Idealab Studio, LLC ⁽¹⁰⁾	16,175	—	16,175	—	—	—	—	—
Isabelle Freidheim	607,309 ⁽²¹⁾	50,556	607,309 ⁽²¹⁾	50,556	—	—	—	—
Jade Kennedy	15,000	—	15,000	—	—	—	—	—
Judith Rodin 2010 Grantor Retained Annuity Trust (Aetna) ⁽¹¹⁾	52,855	—	52,855	—	—	—	—	—
Julie Anne Cullivan	5,714	—	5,714	—	—	—	—	—
Karen Brooks	30,000	—	30,000	—	—	—	—	—
Kay Koplovitz	30,000	—	30,000	—	—	—	—	—
Minneola Ingersoll	1,143	—	1,143	—	—	—	—	—
Nant Capital, LLC ⁽¹²⁾	24,646,323	—	24,646,323	—	—	—	—	—
NeoTribe Ventures I, L.P. for itself and as nominee for NeoTribe Associates I, L.P. ⁽¹³⁾	3,278,214	—	3,278,214	—	—	—	—	—
Phoenix 2021 Holdings, LLC ⁽¹⁴⁾	60,000	—	60,000	—	—	—	—	—
Phyllis Newhouse	4,178,234 ⁽²²⁾	112,777	112,777 ⁽²²⁾	112,777	4,065,457	2.1%	—	—
EVN 2022 GRAT ⁽¹⁵⁾	246,483	—	246,483	—	—	—	—	—
Prime Movers Lab Fund I LP ⁽¹⁶⁾	17,270,403	—	17,270,403	—	—	—	—	—
Project JB LLC ⁽¹⁷⁾	30,714	—	30,714	—	—	—	—	—
SGLG Living Trust dated 12/11/12 ⁽¹⁸⁾	11,428	—	11,428	—	—	—	—	—
STB 2017 Holdings LLC ⁽¹⁹⁾	511	—	511	—	—	—	—	—
The Kay Koplovitz 2018 Revocable Trust ⁽²⁰⁾	22,855	—	22,855	—	—	—	—	—
Valerie Mosley	22,855	—	22,855	—	—	—	—	—
The Gross Goodstein Living Trust, dated April 18, 2006	414,363	—	414,363	—	—	—	—	—
Parksea Investments Limited	79,671	—	79,671	—	—	—	—	—
Wes Ferrari	30,237	—	30,237	—	—	—	—	—
Prime Movers Lab Fund II LP ⁽¹⁶⁾	6,917	—	6,917	—	—	—	—	—
Heliogen PML SPV 1 LP ⁽¹⁶⁾	6,668,457	—	6,668,457	—	—	—	—	—

* Represents less than 1%.

(1) Consists of (i) 2,406,516 shares of common stock and (ii) 1,000,000 shares of common stock issued pursuant to that certain subscription agreement entered into on July 6, 2021 between Heliogen and the named selling securityholder.

(2) John M. Bader has voting and/or investment control over the securities held by Flying Port LLC and thus may be deemed to beneficially own the shares.

(3) Boaz Weinstein is the managing member of the general partner of the Saba Capital Master Fund, Ltd. (“Saba Capital”), investment manager and accordingly may be deemed to have voting and dispositive power with respect to shares held by Saba Capital. Mr. Boaz disclaims beneficial ownership of the securities reported herein for purposes of Section 16 of the Securities and Exchange Act of 1934, as amended, except as to such extent of such reporting person’s pecuniary interest in the securities. The business address of Saba Capital is c/o Saba Capital Management, LP, 405 Lexington Avenue, 58th Floor, New York, New York 10174.

(4) Christopher John Anderson, as the managing member of Virya, LLC, has voting and/or investment control over the securities held by Virya, LLC.

(5) Number of shares of common stock beneficially owned is based on holdings reflected on a Schedule 13D/A filed with the SEC on March 28, 2023. The number of shares offered hereby consists of (i) 1,589,488 shares of common stock and (ii) 4,815,969 shares issuable for vested and exercisable options at the Closing Date. The number of shares offered hereby also includes (i) 414,363 shares of common stock held by The Gross Goodstein Living Trust, dated April 18, 2006, of which Mr. Gross and his wife are co-trustees (“Gross Trust”) and (ii) 16,175 shares of common stock held by Idealab Studio. The Gross Trust owns a majority of the class of securities entitled to elect two directors to Idealab Studio’s board of managers. In addition, Mr. Gross is the chairman and chief executive officer of Idealab Studio. As a result of the foregoing, Mr. Gross may be deemed to beneficially own the securities held by Idealab Studio.

(6) Cherita A. Amorae and Robert D. Winchester have voting and/or investment control over the securities held by Blue Monarch Investments LLC (“Blue Monarch”) and may be deemed to beneficially own the securities owned by Blue Monarch. The business address of Blue Monarch is c/o 755 E. Red House Branch Rd., St. Augustine, FL 32084.

(7) Stacey Yvonne Abrams has sole voting and investment control over the securities held by Brockington and may be deemed to beneficially own the securities owned by Brockington. Ms. Abrams serves as a member of the Board of Directors of the Company.

(8) Sandra Campos is the manager of Cynasure Holdings LLC (“Cynasure”) and has voting and/or investment control over the securities held by Cynasure.

- (9) Based on holdings reflected on a Schedule 13D/A filed with the SEC on March 28, 2023. The shares are held by Idealab Holdings, LLC (“Idealab Holdings”), a wholly-owned subsidiary of Idealab, a California corporation. Idealab is managed by a board of directors consisting of Bill Gross, Marcia Goodstein and Renee LaBran, and no single person has voting or dispositive authority over the securities reported herein. As such, Mr. Gross may be deemed to share beneficial ownership of the securities reported herein. Each of the foregoing persons disclaims any such beneficial ownership. The address for each of the entities and individuals listed in this footnote is 130 West Union Street, Pasadena, CA 91103.

- (10) Idealab Studio, LLC is managed by a board of directors consisting of Bill Gross, Allen Morgan and Howard Morgan. The Gross Trust, of which Mr. Gross and his wife are co-trustees, owns a majority of the class of securities entitled to elect two directors to Idealab Studio’s board of managers. In addition, Mr. Gross is the chairman and chief executive officer of Idealab Studio. As a result of the foregoing, Mr. Gross may be deemed to share voting and dispositive power and beneficially own the securities held by Idealab Studio. The address for each of the entities and individuals listed in this footnote is 130 West Union Street, Pasadena, CA 91103.
- (11) Alexander Niejelow is the trustee of the Judith Rodin 2010 Grantor Retained Annuity Trust (Aetna) (the “Rodin Trust”) and may be deemed to have the power to vote or dispose of the securities held by the Rodin Trust.
- (12) The shares are held by Nant Capital LLC (“Nant Capital”). California Capital Equity, LLC (“CalCap”) directly owns all of the equity interests of Nant Capital, LLC and CalCap may be deemed to have beneficial ownership of the shares held by Nant Capital. Dr. Patrick Soon-Shiong directly owns all of the equity interests of CalCap and has sole voting and dispositive power over the shares held by CalCap. The address of the principal business office of Nant Capital, LLC is 9922 Jefferson Blvd, Culver City, CA, 90232.
- (13) Represents holdings as of March 24, 2023, based on information provided by the selling securityholder. Krishna Swaroop Kolluri is the general partner NeoTribe Ventures I, L.P. for itself and as nominee for NeoTribe Associates I, L.P. and may be deemed to have beneficial ownership of the shares held by each of them. The address for each of the entities and individuals listed in this footnote is 2744 Sand Hill Road, Suite 150, Menlo Park CA 94025.
- (14) Grace Vandecruze has voting and/or investment control over the securities held by Phoenix 2021 Holdings, LLC (“Phoenix 2021”) and may be deemed to beneficially own the securities owned by Phoenix 2021.
- (15) The shares are held by a grantor retained annuity trust, the EVN 2022 GRAT fbo Ezekiel Newhouse, over which Phyllis Newhouse has sole voting and dispositive power.
- (16) Number of shares of common stock beneficially owned is based on holdings reflected on a Schedule 13D filed with the SEC on February 13, 2023. Dakin Sloss is the managing member of each of Prime Movers Lab GP I LLC (“GP I”) and Prime Movers Lab GP II LLC (“GP II”). PML GP I is the general partner of Prime Movers Lab Fund I LP (“PMLF I”). PML GP II is the general partner of each of Prime Movers Lab Fund II LP (“PMLF II”) and Heliogen PML SPV 1 LP (“PML SPV”). As manager of each of GP I and GP II, Mr. Sloss may be deemed to have shared voting and dispositive power over and may be deemed to have beneficial ownership of the shares held by each of PMLF I, PMLF II and PML SPV.. The address for each of the entities and individuals listed in this footnote is PO Box 12829, Jackson, WY 83002.
- (17) Chenxi Wang has voting and/or investment control over the securities held by Project JB LLC (“Project JB”) and may be deemed to beneficially own the securities owned by Project JB.
- (18) Theresia Gouw is the trustee of SGLG 2012 Living Trust dated December 11, 2012 (the “SGLG Trust”) and may be deemed to have the power to vote or dispose of the securities held by the SGLG Trust.
- (19) Brent Brown is the operating manager of STB 2017 Holdings LLC (“STB Holdings”) and may be deemed to have the power to vote or dispose of the securities held by STB Holdings.
- (20) Kay Koplovitz is the trustee of The Kay Koplovitz 2018 Revocable Trust (the “Koplovitz Trust”) and may be deemed to have the power to vote or dispose of the securities held by the Koplovitz Trust.
- (21) Includes 50,556 shares of common stock issuable upon exercise of the Private Warrants, which may be exercised at any time prior to their expiration on December 30, 2026, or earlier upon redemption or liquidation.
- (22) Includes 112,777 shares of common stock issuable upon exercise of the Private Warrants, which may be exercised at any time prior to their expiration on December 30, 2026, or earlier upon redemption or liquidation.

PLAN OF DISTRIBUTION

We may sell the securities described herein, and the Selling Securityholders may sell some or all of the shares of common stock or Private Warrants that they hold, from time to time in one or more offerings, by a variety of methods, including the following:

- on any national securities exchange or quotation service on which our securities may be listed at the time of sale, including the NYSE;
- in the over-the-counter market;
- in transactions otherwise than on such exchange or in the over-the-counter market, which may include privately negotiated transactions and sales directly to one or more purchasers;
- through ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;
- through purchases by a broker-dealer as principal and resale by the broker-dealer for its account;
- through underwriters, broker-dealers, agents, in privately negotiated transactions, or any combination of these methods;
- through short sales;

- through the writing or settlement of options or other hedging transactions, whether through an options exchange or otherwise;
- by pledge to secure debts or other obligations;
- a combination of any of these methods; or
- by any other method permitted pursuant to applicable law.

As used in this prospectus, “Selling Securityholders” includes transferees, pledgees, donees, assignees or successors selling shares received after the date of this prospectus from a Selling Securityholder as a gift, pledge, partnership distribution or other non-sale related transfer.

We will not receive any proceeds from the sale of securities that may be sold from time to time pursuant to this prospectus by the Selling Securityholders. We will bear the costs associated with this registration in accordance with the agreements granting registration rights to the Selling Securityholders. However, the Selling Securityholders will bear any brokerage commissions, transfer taxes, or underwriting commissions and discounts attributable to their sale of securities pursuant to this prospectus. To our knowledge, there are currently no plans, arrangements or understandings between any Selling Securityholders and any underwriter, broker-dealer or agent regarding the sale of securities pursuant to this prospectus by the Selling Securityholders.

We or the Selling Securityholders may sell the securities to or through one or more underwriters or dealers (acting as principal or agent), through agents, or directly to one or more purchasers. We or the Selling Securityholders may distribute the securities from time to time in one or more transactions:

- at a fixed price or prices, which may be changed;
- at market prices prevailing at the time of sale;
- at prices related to such prevailing market prices;
- at varying prices determined at the time of sale; or
- at negotiated prices.

We will describe the terms of the offering of the securities and the specific plan of distribution in a prospectus supplement or supplements to this prospectus, any related free writing prospectus that we may authorize to be provided to you, an amendment to the registration statement of which this prospectus is a part or other filings we make with the SEC under the Exchange Act that are incorporated by reference. Such description may include, to the extent applicable:

- the name or names of any underwriters, dealers, agents or other purchasers;
- the purchase price of the securities or other consideration therefor, and the proceeds, if any, we or the Selling Securityholders will receive from the sale;
- any options to purchase additional shares or other options under which underwriters, dealers, agents or other purchasers may purchase additional securities from us or the Selling Securityholders;
- any agency fees or underwriting discounts and other items constituting agents’ or underwriters’ compensation;
- any public offering price;
- any discounts or concessions allowed or reallocated or paid to dealers; and
- any securities exchange or market on which the securities may be listed.

Only underwriters named in the prospectus supplement will be underwriters of the securities offered by the prospectus supplement. The Selling Securityholders who participate in the sale or distribution of the securities offered by the Selling Securityholders and any dealers and agents participating in the distribution of the securities may be deemed to be underwriters, and compensation received by them on resale of the securities may be deemed to be underwriting discounts. Any Selling Securityholders identified as registered broker-dealers in the Selling Securityholders table in the section titled “*Selling Securityholders*” are deemed to be underwriters. If such dealers or agents were deemed to be underwriters, they may be subject to statutory liabilities under the Securities Act.

If underwriters are used in the sale, they will acquire the securities for their own account and may resell the securities from time to time in one or more transactions at a fixed public offering price or at varying prices determined at the time of sale. The obligations of the underwriters to purchase the securities will be subject to the conditions set forth in the applicable underwriting agreement. We or the Selling Securityholders may offer the securities to the public through underwriting syndicates represented by managing underwriters or by underwriters without a syndicate. Subject to certain conditions, the underwriters will be obligated to purchase all of the securities offered by the prospectus supplement, other than securities covered by any option to purchase additional shares or other option. If a dealer is used in the sale of securities, we or the Selling Securityholders, or an underwriter, will sell the securities to the dealer, as principal. The dealer may then resell the securities to the public at varying prices to be determined by the dealer at the time of resale. To the extent required, we will set forth in the prospectus supplement the name of the dealer and the terms of the transaction. Any public offering price and any discounts or concessions allowed or reallocated or paid to dealers may change from time to time. We or the Selling Securityholders may use underwriters, dealers or agents with whom we have a material relationship. We will describe in the prospectus supplement, naming the underwriter, dealer or agent, the nature of any such relationship.

We or the Selling Securityholders may sell securities directly or through agents we designate from time to time. We will name any agent involved in the offering and sale of securities and we will describe any commissions payable to the agent in the prospectus supplement. Unless the prospectus supplement states otherwise, the agent will act on a best-efforts basis for the period of its appointment.

We may provide agents, dealers and underwriters with indemnification against civil liabilities, including liabilities under the Securities Act, or contribution with respect to payments that the agents or dealers or underwriters may make with respect to these liabilities. Agents, dealers and underwriters or their affiliates may engage in transactions with, or perform services for us in the ordinary course of business.

With respect to the offering and sale of securities under this prospectus by the Selling Securityholders, we have agreed to indemnify each Selling Securityholder and any underwriter for such Selling Securityholder (as determined in the Securities Act) against specified liabilities, including liabilities under the Securities Act. The Selling Securityholders have agreed to indemnify us against specified liabilities, including liabilities under the Securities Act. In addition, we have agreed to pay substantially all of the expenses incidental to the registration, offering and sale of securities pursuant to this prospectus by the Selling Securityholders to the public, including the payment of federal securities law and state blue sky registration fees and the reasonable fees and disbursements of one counsel for the Selling Securityholders, except that we will not bear any brokers' or underwriters' discounts and commissions, fees and expenses of counsel to underwriters or brokers, transfer taxes or transfer fees relating to the sale of securities by the Selling Securityholders.

We may engage in at-the-market offerings into an existing trading market in accordance with rule 415(a)(4) under the Securities Act. In addition, we or the Selling Securityholders may enter into derivative transactions with third parties, or sell securities not covered by this prospectus to third parties in privately negotiated transactions. If the applicable prospectus supplement so indicates, in connection with those derivatives, the third parties may sell securities covered by this prospectus and the applicable prospectus supplement, including in short sale transactions. If so, the third party may use securities pledged by us or the Selling Securityholders or borrowed from us, the Selling Securityholders or others to settle those sales or to close out any related open borrowings of common stock, and may use securities received from us or the Selling Securityholders in settlement of those derivatives to close out any related open borrowings of our common stock. In addition, we or the Selling Securityholders may loan or pledge securities to a financial institution or other third party that in turn may sell the securities using this prospectus and an applicable prospectus supplement. Such financial institution or other third party may transfer its economic short position to investors in our securities or in connection with a concurrent offering of other securities.

All securities we may offer, other than common stock and the Warrants, will be new issues of securities with no established trading market. Any underwriters may make a market in these securities, but will not be obligated to do so and may discontinue any market making at any time without notice. We cannot guarantee the liquidity of the trading markets for any securities.

Any underwriter may be granted an option to purchase additional shares, and engage in stabilizing transactions, short-covering transactions and penalty bids in accordance with Regulation M under the Exchange Act. An underwriter's option to purchase additional shares involves sales in excess of the offering size, which create a short position. Stabilizing transactions permit bids to purchase the underlying security so long as the stabilizing bids do not exceed a specified maximum price. Syndicate-covering or other short-covering transactions involve purchases of the securities, either through exercise of the option to purchase additional shares or in the open market after the distribution is completed, to cover short positions. Penalty bids permit the underwriters to reclaim a selling concession from a dealer when the securities originally sold by the dealer are purchased in a stabilizing or covering transaction to cover short positions. Those activities may cause the price of the securities to be higher than it would otherwise be. If commenced, the underwriters may discontinue any of the activities at any time.

Any underwriters, dealers or agents that are qualified market makers on the New York Stock Exchange may engage in passive market making transactions in our common stock on the New York Stock Exchange in accordance with Regulation M under the Exchange Act, during the business day prior to the pricing of the offering, before the commencement of offers or sales of the common stock. Passive market makers must comply with applicable volume and price limitations and must be identified as passive market makers. In general, a passive market maker must display its bid at a price not in excess of the highest independent bid for such security; if all independent bids are lowered below the passive market maker's bid, however, the passive market maker's bid must then be lowered when certain purchase limits are exceeded. Passive market making may stabilize the market price of the securities at a level above that which might otherwise prevail in the open market and, if commenced, may be discontinued at any time.

LEGAL MATTERS

Unless otherwise indicated in the applicable prospectus supplement, Cooley LLP, Los Angeles, California, will pass upon the validity of the securities offered by this prospectus and any supplement thereto. Additional legal matters may be passed upon for us or any underwriters, dealers or agents, by counsel that we name in the applicable prospectus supplement.

EXPERTS

The consolidated financial statements as of and for the year ended December 31, 2021 incorporated by reference in this Prospectus and in the Registration Statement have been so incorporated in reliance on the report of BDO USA, LLP, an independent registered public accounting firm, incorporated herein by reference, given on the authority of said firm as experts in auditing and accounting.

The consolidated financial statements as of December 31, 2022 and for the year ended December 31, 2022 incorporated in this Prospectus by reference to the Annual Report on Form 10-K for the year ended December 31, 2022 have been so incorporated in reliance on the report (which contains an explanatory paragraph relating to the Company's net losses as described in Note 1 to the consolidated financial statements) of PricewaterhouseCoopers LLP, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

WHERE YOU CAN FIND ADDITIONAL INFORMATION

This prospectus is part of the registration statement on Form S-3 we filed with the SEC under the Securities Act and does not contain all the information set forth or incorporated by reference in the registration statement. Whenever a reference is made in this prospectus to any of our contracts, agreements or other documents, the reference may not be complete and you should refer to the exhibits that are a part of the registration statement or the exhibits to the reports or other documents incorporated by reference into this prospectus for a copy of such contract, agreement or other document. Because we are subject to the information and reporting requirements of the Exchange Act, we are required to file annual, quarterly and current reports, proxy statements and other information with the SEC as required by the Exchange Act. You can read our SEC filings, including this prospectus, over the Internet at the SEC's website at <http://www.sec.gov>.

Our website address is www.Heliogen.com. Through our website, we make available, free of charge, the documents that are electronically filed with, or furnished to, the SEC as soon as reasonably practicable after they are filed with, or furnished to, the SEC, including our Annual Reports on Form 10-K; our proxy statements for our annual and special stockholder meetings; our Quarterly Reports on Form 10-Q; our Current Reports on Form 8-K; Forms 3, 4, and 5 and Schedules 13D with respect to our securities filed on behalf of our directors and our executive officers; and amendments to those documents. The information contained on, or that may be accessed through, our website is not a part of, and is not incorporated into, this prospectus.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to "incorporate by reference" information from other documents that we file with it, which means that we can disclose important information to you by

referring you to those documents. The information incorporated by reference is considered to be part of this prospectus. Information in this prospectus supersedes information incorporated by reference that we filed with the SEC prior to the date of this prospectus, while information that we file later with the SEC will automatically update and supersede the information in this prospectus. We incorporate by reference into this prospectus and the registration statement of which this prospectus is a part the information or documents listed below that we have filed with the SEC:

- our Annual Report on [Form 10-K](#) for the year ended December 31, 2022, filed with the SEC on March 29, 2023;
- our Quarterly Report on [Form 10-Q](#) for the quarter ended March 31, 2023, filed with the SEC on May 10, 2023;
- our Current Reports on Form 8-K filed with the SEC on [February 6, 2023](#), [March 6, 2023](#) and [April 17, 2023](#); and
- the description of our common stock and Warrants contained in our Registration Statement on [Form 8-A](#), filed with the SEC on March 12, 2021, as updated by [Exhibit 4.4](#) to our Annual Report on [Form 10-K](#) for the year ended December 31, 2021 filed with the SEC on March 31, 2022, together with any amendment or report filed with the SEC for the purpose of updating such description.

All filings filed by us pursuant to the Exchange Act after the date of the initial filing of the registration statement of which this prospectus is a part and prior to effectiveness of the registration statement shall be deemed to be incorporated by reference into this prospectus.

We also incorporate by reference any future filings (other than current reports furnished under Item 2.02 or Item 7.01 of Form 8-K and exhibits filed on such form that are related to such items unless such Form 8-K expressly provides to the contrary) made with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act, including those made after the date of the initial filing of the registration statement of which this prospectus is a part and prior to effectiveness of such registration statement, until we file a post-effective amendment that indicates the termination of the offering of the securities made by this prospectus and will become a part of this prospectus from the date that such documents are filed with the SEC. Information in such future filings updates and supplements the information provided in this prospectus. Any statements in any such future filings will automatically be deemed to modify and supersede any information in any document we previously filed with the SEC that is incorporated or deemed to be incorporated herein by reference to the extent that statements in the later filed document modify or replace such earlier statements.

You can request a copy of these filings, at no cost, by writing or telephoning us at the following address or telephone number:

Heliogen, Inc.
130 West Union Street
Pasadena, California 91103
(626) 720-4530

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PART II

INFORMATION NOT REQUIRED IN PROSPECTUS

Item 14. Other Expenses of Issuance and Distribution

The following table sets forth an estimate of the fees and expenses, other than the underwriting discounts and commissions, payable by us in connection with the issuance and distribution of the securities being registered. The Selling Securityholders will not bear any portion of such costs and expenses.

SEC registration fee	\$ 16,718.76(1)
The New York Stock Exchange fee	\$ (2)
FINRA filing fee	\$ (2)
Accounting fees and expenses	\$ (2)
Legal fees and expenses	\$ (2)
Transfer agent and registrar, trustee and depository fees	\$ (2)
Printing and miscellaneous fees and expenses	\$ (2)
Total	<u>\$ (2)</u>

(1) These fees comprise the registration fee for the registration of an aggregate amount of \$150,000,000 of any combination of the securities described in this prospectus to be offered by the Registrant and the registration of the resale by selling stockholders named herein of an additional 6,831,790 shares of common stock (including 163,333 shares of common stock issuable upon the exercise of the Private Warrants) not previously registered under the Initial Registration Statement (as defined below). This Registration Statement also registers 71,025,640 shares of common stock and 163,333 whole Private Warrants to be offered by the selling securityholders and the issuance by the Registrant of 8,333,333 shares of common stock upon the exercise of the Public Warrants, which registration fees with respect to these securities were previously paid on the Registrant's registration statement on Form S-1 (No. 333-262319), initially filed on January 24, 2022, and declared effective on February 3, 2022, as most recently amended by Post-Effective Amendment No. 3 to Form S-1 on Form S-3, filed on March 30, 2023 and declared effective on April 5, 2023 (the "Initial Registration Statement"). Pursuant to Rule 429 under the Securities Act, the prospectus included in this registration statement is a combined prospectus relating to this registration statement and the Initial Registration Statement.

(2) The amount of securities and number of offerings are indeterminable and the expenses cannot be estimated at this time. An estimate of the aggregate expenses in connection with the sale and distribution of securities being offered will be included in the applicable prospectus supplement.

Item 15. Indemnification of Directors and Officers

Section 145(a) of the DGCL provides, in general, that a corporation may indemnify any person who was or is a party to or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (other than an action by or in the right of the corporation), because he or she is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by the person in connection with such action, suit or proceeding, if he or she acted in good faith and in a manner he or she reasonably believed to be in or not opposed to the best interests of the corporation and, with respect to any criminal action or proceeding, had no reasonable cause to believe his or her conduct was unlawful.

Section 145(b) of the DGCL provides, in general, that a corporation may indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action or suit by or in the right of the corporation to procure a judgment in its favor because the person is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, against expenses (including attorneys' fees) actually and reasonably incurred by the person in connection with the defense or settlement of such action or suit if he or she acted in good faith and in a manner he or she reasonably believed to be in or not opposed to the best interests of the corporation, except that no indemnification shall be made with respect to any claim, issue or matter as to which he or she shall have been adjudged to be liable to the corporation unless and only to the extent that the Court of Chancery or other adjudicating court determines that, despite the adjudication of liability but in view of all of the circumstances of the case, he or she is fairly and reasonably entitled to indemnity for such expenses that the Court of Chancery or other adjudicating court shall deem proper.

Section 145(g) of the DGCL provides, in general, that a corporation may purchase and maintain insurance on behalf of any person who is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise against any liability asserted against such person and incurred by such person in any such capacity, or arising out of his or her status as such, whether or not the corporation would have the power to indemnify the person against such liability under Section 145 of the DGCL.

Additionally, our Certificate of Incorporation eliminates our directors' liability to the fullest extent permitted under the DGCL. The DGCL provides that directors of a corporation will not be personally liable for monetary damages for breach of their fiduciary duties as directors, except for liability:

- for any transaction from which the director derives an improper personal benefit;
- for any act or omission not in good faith or that involves intentional misconduct or a knowing violation of law;
- for any unlawful payment of dividends or redemption of shares; or
- for any breach of a director's duty of loyalty to the corporation or its stockholders.

If the DGCL is amended to authorize corporate action further eliminating or limiting the personal liability of directors, then the liability of our directors will be eliminated or limited to the fullest extent permitted by the DGCL, as so amended.

In addition, we have entered into separate indemnification agreements with our directors and officers. These agreements, among other things, require us to indemnify our directors and officers for certain expenses, including attorneys' fees, judgments, fines, and settlement amounts incurred by a director or officer in any action or proceeding arising out of their services as one of our directors or officers or any other company or enterprise to which the person provides services at our request.

We maintain a directors' and officers' insurance policy pursuant to which our directors and officers are insured against liability for actions taken in their capacities as directors and officers.

Any underwriting agreement that we may enter into will provide for indemnification by any underwriters of the company, our directors, our officers who sign the registration statement and our controlling persons, if any, for some liabilities, including liabilities arising under the Securities Act.

Item 16. Exhibits

EXHIBIT NUMBER	DESCRIPTION OF EXHIBIT	INCORPORATED BY REFERENCE			
		SCHEDULE/FORM	FILE NUMBER	EXHIBIT	FILE DATE
1.1*	Form of Underwriting Agreement.				
2.1†	Business Combination Agreement, dated as of July 6, 2021, by and among Athena Technology Acquisition Corp., Heliomax Merger Sub, Inc. and Heliogen, Inc.	Form 8-K	001-40209	2.1	July 7, 2021
3.1	Second Amended and Restated Certificate of Incorporation of Heliogen, Inc.	Form 8-K	001-40209	3.1	January 6, 2022
3.2	Second Amended and Restated Bylaws of Heliogen, Inc.	Form 10-Q	001-40209	3.2	November 8, 2022
4.1	Specimen Common Stock Certificate.	Form 8-K	001-40209	4.1	January 6, 2022
4.2*	Form of Certificate of Designation of Preferred Stock.				
4.3*	Specimen Preferred Stock Certificate				
4.4***	Form of Indenture.				
4.5*	Form of Debt Securities.				
4.6*	Form of Common Stock Warrant Agreement and Warrant Certificate				
4.7*	Form of Preferred Stock Warrant Agreement and Warrant Certificate				
4.8*	Form of Debt Securities Warrant Agreement and Warrant Certificate				
4.9*	Form of Rights Agreement				
4.10*	Form of Unit Agreement and Unit Certificate				
5.1	Opinion of Cooley LLP.				
23.1	Consent of BDO USA, LLP, independent registered public accounting firm.				

23.2 [Consent of PricewaterhouseCoopers LLP, independent registered public accounting firm](#)

23.3 [Consent of Cooley LLP \(included in Exhibit 5.1\).](#)

24.1*** [Power of Attorney. Reference is made to the signature pages of this Form S-3.](#)

25.1** Statement of Eligibility of Trustee Under the Indenture.

107 [Filing Fee Table.](#)

* To be filed by amendment or as an exhibit to a Current Report on Form 8-K and incorporated herein by reference, if applicable.

** To be filed in accordance with the requirements of Section 305(b)(2) of the Trust Indenture Act of 1939, as amended, and the applicable rules thereunder.

*** Previously filed.

† Certain of the exhibits and schedules to this Exhibit have been omitted in accordance with Regulation S-K Item 601. The Company agrees to furnish a copy of all omitted exhibits and schedules to the SEC upon its request.

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Item 17. Undertakings

The undersigned registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:

(i) to include any prospectus required by Section 10(a)(3) of the Securities Act;

(ii) to reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20% change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement; and

(iii) to include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement;

provided, however, that paragraphs (1)(i), (1)(ii) and (1)(iii) do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Commission by the registrant pursuant to Section 13 or 15(d) of the Exchange Act that are incorporated by reference in the registration statement, or is contained in a form of prospectus filed pursuant to Rule 424(b) that is part of the registration statement.

(2) That, for the purpose of determining any liability under the Securities Act, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

(4) That, for the purpose of determining liability under the Securities Act to any purchaser:

(i) Each prospectus filed by the registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and

(ii) Each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5), or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii), or (x) for the purpose of providing the information required by Section 10(a) of the Securities Act shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof. Provided, however, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such effective date, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such effective date.

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(5) That, for the purpose of determining liability of the registrant under the Securities Act to any purchaser in the initial distribution of the securities, the undersigned registrant undertakes that in a primary offering of securities of the undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:

(i) Any preliminary prospectus or prospectus of the undersigned registrant relating to the offering required to be filed pursuant to Rule 424;

(ii) Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned registrant or used or referred to by the undersigned registrant;

(iii) The portion of any other free writing prospectus relating to the offering containing material information about the undersigned registrant or its securities provided by or on behalf of the undersigned registrant; and

(iv) Any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.

(6) That, for the purpose of determining liability of the registrant under the Securities Act, each filing of the registrant's annual report pursuant to Section 13(a) or Section 15(d) of the Exchange Act (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Exchange Act) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.

(7) That, for purposes of determining any liability under the Securities Act:

(i) the information omitted from the form of prospectus filed as part of the registration statement in reliance upon Rule 430A and contained in the form of prospectus filed by the registrant pursuant to Rule 424(b)(1) or (4) or 497(h) under the Securities Act shall be deemed to be a part of the registration statement as of the time it was declared effective; and

(ii) each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.

(8) To file an application for the purpose of determining the eligibility of the trustee to act under subsection (a) of Section 310 of the Trust Indenture Act in accordance with the rules and regulations prescribed by the SEC under Section 305(b)(2) of the Trust Indenture Act.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the SEC such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

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SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Pasadena, State of California, on this 10th day of May, 2023.

HELIOGEN, INC.

By: /s/ Christiana Obiaya
Christiana Obiaya
Chief Executive Officer

Pursuant to the requirements of the Securities Act of 1933, as amended, this registration statement has been signed below by the following persons in the capacities and on the dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Christiana Obiaya</u> Christiana Obiaya	Chief Executive Officer (Principal Executive Officer)	May 10, 2023
<u>/s/ Kelly Rosser</u> Kelly Rosser	Interim Chief Financial Officer (Principal Financial and Accounting Officer)	May 10, 2023
<u>*</u> Phyllis W. Newhouse	Director	May 10, 2023
<u>*</u> Robert Kavner	Director	May 10, 2023
<u>*</u> Julie M. Kane	Director	May 10, 2023
<u>*</u> Barbara Burger	Director	May 10, 2023
<u>*</u> Stacey Abrams	Director	May 10, 2023
<u>*</u> Roger Lazarus	Director	May 10, 2023

* _____ Director
Suntharesan Padmanathan

May 10, 2023

*By: /s/ Kelly Rosser
Kelly Rosser
Attorney-in-fact



John-Paul Motley
+1 213 561 3204
jpmotley@cooley.com

May 10, 2023

Heliogen, Inc.
130 West Union Street
Pasadena, CA 91103

Re: Heliogen, Inc. – Registration Statement on Form S-3

Ladies and Gentlemen:

We have acted as counsel to Heliogen, Inc., a Delaware corporation (the “*Company*”), in connection with the filing of a Registration Statement on Form S-3 (the “*Registration Statement*”) by the Company under the Securities Act of 1933, as amended (the “*Securities Act*”). The Registration Statement includes a prospectus (the “*Base Prospectus*”) that provides it will be supplemented in the future by one or more prospectus supplements (each, a “*Prospectus Supplement*”). The Registration Statement, including the Base Prospectus (as supplemented from time to time by one or more Prospectus Supplements), relates to:

- (a) the registration for sale by the Company, in one or more offerings of up to \$150,000,000, of the following securities:
 - (i) shares (the “*Company Common Shares*”) of common stock, par value \$0.0001 per share, of the Company (the “*Common Stock*”);
 - (ii) shares of preferred stock, par value \$0.0001 per share, of the Company (the “*Preferred Stock*”);
 - (iii) debt securities, in one or more series (the “*Debt Securities*”), which may be issued pursuant to an indenture to be dated on or about the date of the first issuance of Debt Securities thereunder, by and between a trustee to be selected by the Company (the “*Trustee*”) and the Company, in the form filed as Exhibit 4.4 to the Registration Statement and one or more indentures supplemental thereto with respect to any particular series of Debt Securities (the “*Indenture*”);
 - (iv) warrants to purchase Common Stock, Preferred Stock or Debt Securities (the “*Future Warrants*”), which may be issued under one or more warrant agreements, to be dated on or about the date of the first issuance of the Future Warrants thereunder, by and between a warrant agent to be selected by the Company (the “*Warrant Agent*”) and the Company (each, a “*Warrant Agreement*”);
 - (v) rights (the “*Rights*”) to purchase Common Stock, Preferred Stock, Debt Securities, Future Warrants and Units (as defined below), which may be issued pursuant to one or more rights agreements, to be dated on or about the date of first issuance of the Rights thereunder, by and between a rights agent to be selected by the Company (the “*Rights Agent*”) and the Company (each, a “*Rights Agreement*”); and

Cooley LLP 355 S. Grand Ave Suite 900, Los Angeles, CA 90071
t: (213) 561-3250 f: (213) 561-3244 cooley.com

May 10, 2023
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- (vi) units (the “*Units*”, and together with the Common Stock, the Preferred Stock, the Debt Securities, the Future Warrants and the Rights, the “*Company Securities*”) consisting of two or more series of Common Stock, Preferred Stock, Debt Securities, Future Warrants and Rights, which may be issued pursuant to one or more unit agreements, to be dated on or about the date of first issuance of the Units thereunder, by and between a units agent to be selected by the Company (the “*Units Agent*”) and the Company (each, a “*Unit Agreement*”).
- (b) the issuance by the Company of up to 8,496,666 shares of Common Stock issuable upon the exercise of outstanding warrants, consisting of:
 - (i) up to 163,333 shares (the “*Private Warrant Shares*”) of Common Stock issuable upon the exercise of certain outstanding warrants (the “*Private Warrants*”) by the holders thereof; and
 - (ii) up to 8,333,333 shares (the “*Public Warrant Shares*” and, together with the Private Warrant Shares, the “*Warrant Shares*”) of Common Stock issuable upon the exercise of certain outstanding warrants (the “*Public Warrants*”) and, together with the Private Warrants, the “*Outstanding Warrants*”) by the holders thereof.
- (c) the resale of up to 163,333 Private Warrants; and
- (d) the resale of up to 77,857,430 shares of Common Stock (including up to 163,333 Private Warrant Shares) held by the selling stockholders listed in the Registration Statement (the “*Selling Stockholder Shares*”).

The Company Securities plus any additional Company Securities that may be registered pursuant to any registration statement that the Company may hereafter file with the Securities and Exchange Commission pursuant to Rule 462(b) under the Securities Act in connection with an offering by the Company pursuant to the Registration Statement, are collectively referred to herein as the “*Company Shelf Securities*.” The Company Shelf Securities, the Warrant Shares, the Private Warrants and the Selling Stockholder Shares are collectively referred to herein as the “*Securities*”. The Securities are being registered for offer and sale from time to time pursuant to Rule 415 under the Securities Act.

In connection with this opinion, we have examined and relied upon such records, documents, certificates, opinions, memoranda and other instruments as in our judgment are necessary or appropriate to enable us to render the opinion expressed below. As to certain factual matters, we have relied upon a certificate of an officer of the Company and have not independently verified such matters.

In rendering this opinion, we have assumed the genuineness of all signatures; the authenticity of all documents submitted to us as originals; the conformity to originals of all documents submitted to us as copies; the accuracy, completeness and authenticity of certificates of public officials; and the due authorization, execution and delivery of all documents where authorization, execution and delivery are prerequisites to the effectiveness of such documents.

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With respect to our opinion as to the Company Common Shares and the Warrant Shares, we have assumed that, at the time of issuance and sale, a sufficient number of shares of Common Stock will be authorized and available for issuance and that the consideration for the issuance and sale of the Common Stock (or Preferred Stock or Debt Securities convertible into, or Future Warrants, Rights or Units exercisable for, Common Stock) will be in an amount that is not less than the par value of the Common Stock. With respect to our opinion as to the Preferred Stock, we have assumed that, at the time of issuance and sale, a sufficient number of shares of Preferred Stock will be authorized, designated and available for issuance and that the consideration for the issuance and sale of the Preferred Stock (or Debt Securities convertible into, or Future Warrants, Rights or Units exercisable for, Preferred Stock) will be in an amount that is not less than the par value of the Preferred Stock. We have also assumed that any Debt Securities offered under the Registration Statement, and the related Indenture will be executed in the form filed as an exhibit to the Registration Statement. We have also assumed that (i) with respect to Company Shelf Securities issuable upon conversion of any convertible Preferred Stock, such convertible Preferred Stock will be duly authorized, validly issued, fully paid and nonassessable; and (ii) with respect to any Company Shelf Securities issuable upon conversion of any convertible Debt Securities or upon exercise of any Future Warrants, Rights or Units, such convertible Debt Securities or Future Warrants, Rights or Units will constitute valid and legally binding obligations of the Company, enforceable against the Company in accordance with their terms, except as enforcement may be limited by applicable bankruptcy, insolvency, reorganization, arrangement, moratorium or other similar laws affecting creditors' rights, and subject to general equity principles and to limitations on availability of equitable relief, including specific performance.

With respect to any Outstanding Warrants, we express no opinion to the extent that future issuances of securities of the Company, antidilution adjustments to outstanding securities of the Company and/or other matters cause the number of shares of Common Stock issuable upon exercise thereof to exceed the number of shares available for issuance by the Company. Further, we have assumed the exercise price of the Outstanding Warrants will not be adjusted to an amount below the par value per share of Common Stock.

Our opinion herein is expressed solely with respect to the General Corporation Law of the State of Delaware and the laws of the State of New York. Our opinion is limited to the matters stated herein and no opinion is implied or may be inferred beyond the matters expressly stated. Our opinion is based on these laws as in effect on the date hereof. We express no opinion to the extent that any other laws are applicable to the subject matter hereof and express no opinion and provide no assurance as to compliance with any federal or state securities law, rule or regulation.

With regard to our opinion concerning the Private Warrants constituting valid and binding obligations of the Company:

(i) Our opinion is subject to, and may be limited by, (a) applicable bankruptcy, reorganization, insolvency, moratorium, fraudulent conveyance, debtor and creditor, and similar laws which relate to or affect creditors' rights generally, and (b) general principles of equity (including, without limitation, concepts of materiality, reasonableness, good faith and fair dealing) regardless of whether considered in a proceeding in equity or at law.

(ii) Our opinion is subject to the qualification that the availability of specific performance, an injunction or other equitable remedies is subject to the discretion of the court before which the request is brought.

(iii) We express no opinion as to any provision of the Private Warrants that: (a) provides for liquidated damages, buy-in damages, monetary penalties, prepayment or make-whole payments or other economic remedies to the extent such provisions may constitute unlawful penalties; (b) relates to advance waivers of claims, defenses, rights granted by law, or notice, opportunity for hearing, evidentiary requirements, statutes of limitations, trial by jury, or procedural rights; (c) restricts non-written modifications and waivers; (d) provides for the payment of legal and other professional fees where such payment is contrary to law or public policy; (e) relates to exclusivity, election or accumulation of rights or remedies; (f) authorizes or validated conclusive or discretionary determinations; or (g) provides that provisions of the Private Warrants are severable to the extent an essential part of the agreed exchange is determined to be invalid and unenforceable.

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(iv) We express no opinion as to whether a state court outside of the State of New York or a federal court of the United States would give effect to the choice of New York law provided for in the Private Warrants.

On the basis of the foregoing, and in reliance thereon, and subject to the qualifications herein stated, we are of the opinion that:

1. With respect to the Company Common Shares offered under the Registration Statement, provided that (i) the Registration Statement and any required post-effective amendment thereto have become effective under the Securities Act and Common Stock and any and all Prospectus Supplement(s) required by applicable laws have been delivered and filed as required by such laws; (ii) the issuance of the Company Common Shares has been duly authorized by all necessary corporate action on the part of the Company; (iii) the issuance and sale of the Company Common Shares do not violate any applicable law, are in conformity with the Company's then operative certificate of incorporation (the "*Certificate of Incorporation*") and bylaws (the "*Bylaws*"), do not result in a default under or breach of any agreement or instrument binding upon the Company and comply with any applicable requirement or restriction imposed by any court or governmental body having jurisdiction over the Company; and (iv) the certificates, if any, for the Company Common Shares have been duly executed by the Company, countersigned by the transfer agent therefor and duly delivered to the purchasers thereof against payment therefor, then the Company Common Shares, when issued and sold as contemplated in the Registration Statement, the Base Prospectus and the related Prospectus Supplement(s) and in accordance with a duly authorized, executed and delivered purchase, underwriting or similar agreement, or upon conversion of any convertible Preferred Stock, or convertible Debt Securities in accordance with their terms, or upon exercise of any Future Warrants, Rights or Units in accordance with their terms, will be validly issued, fully paid and nonassessable.

2. With respect to the Preferred Stock offered under the Registration Statement, provided that (i) the Registration Statement and any required post-effective

amendment thereto have become effective under the Securities Act and the Base Prospectus and any and all Prospectus Supplement(s) required by applicable laws have been delivered and filed as required by such laws; (ii) the terms and issuance of the Preferred Stock have been duly authorized by all necessary corporate action on the part of the Company; (iii) the terms of the shares of the Preferred Stock and their issuance and sale do not violate any applicable law, are in conformity with the Certificate of Incorporation and the Bylaws, do not result in a default under or breach of any agreement or instrument binding upon the Company and comply with any applicable requirement or restriction imposed by any court or governmental body having jurisdiction over the Company; and (iv) the certificates, if any, for the Preferred Stock have been duly executed by the Company, countersigned by the transfer agent therefor and duly delivered to the purchasers thereof against payment therefor, then the Preferred Stock, when issued and sold as contemplated in the Registration Statement, the Base Prospectus and the related Prospectus Supplement(s) and in accordance with a duly authorized, executed and delivered purchase, underwriting or similar agreement, or upon conversion of any convertible Debt Securities in accordance with their terms, or upon exercise of any Future Warrants, Rights or Units in accordance with their terms, will be validly issued, fully paid and nonassessable.

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3. With respect to any series of the Debt Securities issued under the Indenture, and offered under the Registration Statement, provided that (i) the Registration Statement and any required post-effective amendment thereto have become effective under the Securities Act and the Base Prospectus and any and all Prospectus Supplement(s) required by applicable laws have been delivered and filed as required by such laws; (ii) the Indenture has been duly authorized by the Company and the Trustee by all necessary corporate action; (iii) the Indenture in substantially the form filed as an exhibit to the Registration Statement, has been duly executed and delivered by the Company and the Trustee and has been qualified under the Trust Indenture Act of 1939, as amended; (iv) the issuance and terms of the Debt Securities have been duly authorized by the Company by all necessary corporate action; (v) the terms of the Debt Securities and of their issuance and sale have been duly established in conformity with the Indenture so as not to violate any applicable law or result in a default under or breach of any agreement or instrument binding upon the Company, so as to be in conformity with the Certificate of Incorporation and the Bylaws, and so as to comply with any requirement or restriction imposed by any court or governmental body having jurisdiction over the Company; and (vi) the notes representing the Debt Securities have been duly executed and delivered by the Company and authenticated by the Trustee pursuant to the Indenture and delivered against payment therefor, then the Debt Securities, when issued and sold in accordance with the Indenture and a duly authorized, executed and delivered purchase, underwriting or similar agreement, or upon exercise of any Future Warrants, Rights or Units in accordance with their terms, will be valid and legally binding obligations of the Company, except as may be limited by bankruptcy, insolvency, reorganization, moratorium or other similar laws relating to or affecting creditors' rights generally, and by general equitable principles (regardless of whether considered in a proceeding at law or in equity).

4. With respect to the Future Warrants issued under a Warrant Agreement and offered under the Registration Statement, provided that (i) the Registration Statement and any required post-effective amendment thereto have become effective under the Securities Act and the Base Prospectus and any and all Prospectus Supplement(s) required by applicable laws have been delivered and filed as required by such laws; (ii) the applicable Warrant Agreement has been duly authorized by the Company and the Warrant Agent by all necessary corporate action; (iii) the applicable Warrant Agreement has been duly executed and delivered by the Company and the Warrant Agent; (iv) the issuance and terms of the Future Warrants have been duly authorized by the Company by all necessary corporate action; (v) the terms of the Future Warrants and of their issuance and sale have been duly established in conformity with the applicable Warrant Agreement and as described in the Registration Statement, the Base Prospectus and the related Prospectus Supplement(s), so as not to violate any applicable law or result in a default under or breach of any agreement or instrument binding upon the Company, so as to be in conformity with the Certificate of Incorporation and the Bylaws, and so as to comply with any requirement or restriction imposed by any court or governmental body having jurisdiction over the Company; and (vi) the Future Warrants have been duly executed and delivered by the Company and authenticated by the Warrant Agent pursuant to the applicable Warrant Agreement and delivered against payment therefor, then the Future Warrants, when issued and sold as contemplated in the Registration Statement, the Base Prospectus and the Prospectus Supplement(s) and in accordance with the applicable Warrant Agreement and a duly authorized, executed and delivered purchase, underwriting or similar agreement, or upon conversion of any convertible Preferred Stock or Debt Securities in accordance with their terms, or upon exercise of any Rights or Units in accordance with their terms, will be valid and legally binding obligations of the Company, except as may be limited by bankruptcy, insolvency, reorganization, moratorium or other similar laws relating to or affecting creditors' rights generally, and by general equitable principles (regardless of whether considered in a proceeding at law or in equity).

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5. With respect to the Rights issued under a Rights Agreement and offered under the Registration Statement, provided that (i) the Registration Statement and any required post-effective amendment thereto have become effective under the Securities Act and the Base Prospectus and any and all Prospectus Supplement(s) required by applicable laws have been delivered and filed as required by such laws; (ii) the applicable Rights Agreement has been duly authorized by the Company and the Rights Agent by all necessary corporate action; (iii) the applicable Rights Agreement has been duly executed and delivered by the Company and the Rights Agent; (iv) the issuance and terms of the Rights have been duly authorized by the Company by all necessary corporate action; (v) the terms of the Rights and of their issuance and sale have been duly established in conformity with the applicable Rights Agreement and as described in the Registration Statement, the Base Prospectus and the related Prospectus Supplement(s), so as not to violate any applicable law or result in a default under or breach of any agreement or instrument binding upon the Company, so as to be in conformity with the Certificate of Incorporation and the Bylaws, and so as to comply with any requirement or restriction imposed by any court or governmental body having jurisdiction over the Company; and (vi) the Rights have been duly executed and delivered by the Company and authenticated by the Rights Agent pursuant to the applicable Rights Agreement and delivered against payment therefor, then the Rights, when issued and sold as contemplated in the Registration Statement, the Base Prospectus and the Prospectus Supplement(s) and in accordance with the applicable Rights Agreement and a duly authorized, executed and delivered purchase, underwriting or similar agreement, or upon conversion of any convertible Preferred Stock or Debt Securities in accordance with their terms, or upon exercise of any Future Warrants or Units in accordance with their terms, will be valid and legally binding obligations of the Company, except as may be limited by bankruptcy, insolvency, reorganization, moratorium or other similar laws relating to or affecting creditors' rights generally, and by general equitable principles (regardless of whether considered in a proceeding at law or in equity).

6. With respect to the Units issued under a Units Agreement and offered under the Registration Statement, provided that (i) the Registration Statement and any required post-effective amendment thereto have become effective under the Securities Act and the Base Prospectus and any and all Prospectus Supplement(s) required by applicable laws have been delivered and filed as required by such laws; (ii) the applicable Units Agreement has been duly authorized by the Company and the Units Agent by all necessary corporate action; (iii) the applicable Units Agreement has been duly executed and delivered by the Company and the Units Agent; (iv) the issuance and terms of the Units have been duly authorized by the Company by all necessary corporate action; (v) the terms of the Units and of their issuance and sale have been duly established in conformity with the applicable Units Agreement and as described in the Registration Statement, the Base Prospectus and the related Prospectus Supplement(s), so as not to violate any applicable law or result in a default under or breach of any agreement or instrument binding upon the Company, so as to be in conformity with the Certificate of

Incorporation and the Bylaws, and so as to comply with any requirement or restriction imposed by any court or governmental body having jurisdiction over the Company; and (vi) the Units have been duly executed and delivered by the Company and authenticated by the Units Agent pursuant to the applicable Units Agreement and delivered against payment therefor, then the Units, when issued and sold as contemplated in the Registration Statement, the Base Prospectus and the Prospectus Supplement(s) and in accordance with the applicable Units Agreement and a duly authorized, executed and delivered purchase, underwriting or similar agreement, or upon conversion of any convertible Preferred Stock or Debt Securities in accordance with their terms, or upon exercise of any Future Warrants or Rights in accordance with their terms, will be valid and legally binding obligations of the Company, except as may be limited by bankruptcy, insolvency, reorganization, moratorium or other similar laws relating to or affecting creditors' rights generally, and by general equitable principles (regardless of whether considered in a proceeding at law or in equity).

7. The Warrant Shares, when issued and paid for upon exercise of the Outstanding Warrants in accordance with the terms of the Outstanding Warrants, will be validly issued, fully paid and nonassessable.

8. The Private Warrants constitute valid and binding obligations of the Company.

9. The Selling Stockholder Shares, other than any Private Warrant Shares included in the Selling Stockholder Shares, are validly issued, fully paid and non-assessable. Any Private Warrant Shares included in the Selling Stockholder Shares, when issued and paid for in accordance with the terms of the Private Warrants, will be validly issued, fully paid and non-assessable.

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We hereby consent to the filing of this opinion as an exhibit to the Registration Statement and to the reference to our firm under the caption "Legal Matters" in the Base Prospectus. We further consent to the incorporation by reference of this opinion into any registration statement filed pursuant to Rule 462(b) under the Securities Act with respect to any additional Company Shelf Securities. In giving such consent, we do not thereby admit that we are in the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations of the Commission thereunder.

Our opinion set forth above is limited to the matters expressly set forth in this letter, and no opinion is implied or may be inferred beyond the matters expressly stated. This opinion speaks only as to law and facts in effect or existing as of the date hereof, and we undertake no obligation or responsibility to update or supplement this opinion to reflect any facts or circumstances that may hereafter come to our attention or any changes in law that may hereafter occur.

Very truly yours,

Cooley LLP

By: /s/ John-Paul Motley
John-Paul Motley

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Consent of Independent Registered Public Accounting Firm

Heliogen, Inc.
Pasadena, California

We hereby consent to the incorporation by reference in the Prospectus constituting a part of this Registration Statement of our report dated March 31, 2022, (May 23, 2022 as to the effects of the restatement discussed in Note 3), relating to the consolidated financial statements of Heliogen, Inc. (the “Company”) appearing in the Company’s Annual Report on Form 10-K for the year ended December 31, 2022.

We also consent to the reference to us under the caption “Experts” in the Prospectus.

/s/ BDO USA, LLP
Los Angeles, California

May 10, 2023

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in this Registration Statement on Form S-3 of Heliogen, Inc. of our report dated March 29, 2023 relating to the financial statements, which appears in Heliogen, Inc.'s Annual Report on Form 10-K for the year ended December 31, 2022. We also consent to the reference to us under the heading "Experts" in such Registration Statement.

/s/ PricewaterhouseCoopers LLP
Los Angeles, California
May 10, 2023

Calculation of Filing Fee Tables

Form S-3
(Form Type)

Heliogen, Inc.

(Exact Name of Registrant as Specified in its Charter)

Table 1: Newly Registered and Carry Forward Securities

Security Type	Security Class Title	Fee Calculation or Carry Forward Rule	Amount Registered	Proposed Maximum Offering Price Per Unit	Maximum Aggregate Offering Price	Fee Rate	Amount of Registration Fee	Carry Forward Form Type	Carry Forward File Number	Carry Forward Initial effective date	Filing Fee Previously Paid In Connection with Unsold Securities to be Carried Forward
Newly Registered Securities											
Fees to Be Paid	Primary Offerings										
	Debt	Debt Securities(1)	(2)	(3)	(3)						
	Equity	Preferred Stock, par value \$0.0001 per share(1)	(2)	(3)	(3)						
	Equity	Common Stock, par value \$0.0001 per share(1)	(2)	(3)	(3)						
	Equity	Rights(1)	(2)	(3)	(3)						
	Equity	Units(1)	(2)	(3)	(3)						
	Other	Warrants(1)	(2)	(3)	(3)						
	Unallocated (Universal) Shelf		457(o)	(2)	(3)	\$ 150,000,000	\$ 0.00011020	\$	16,530(4)		
	Secondary Offerings										
	Equity	Common Stock, par value \$0.0001 per share(5)	457(c)	6,668,457	\$ 0.25(6)	\$ 1,667,114.25	\$ 0.00011020	\$	183.72		
	Equity	Common Stock, par value \$0.0001 per share(5)	457(c)	163,333	\$ 0.28(6)	\$ 45,733.24	\$ 0.00011020	\$	5.04		
Fees Previously Paid	Carry Forward Securities										
Carry Forward Securities	Total Offering Amounts					\$151,712,845.69	\$ 0.00011020	\$	16,718.76		
	Total Fees Previously Paid								16,713.72		
	Total Fee Offsets								N/A		
	Net Fee Due							\$	5.04		

Table 3: Combined Prospectuses

Security Type	Security Class Title	Amount of Securities Previously Registered	Maximum Aggregate Offering Price of Securities Previously Registered	Form Type	File Number	Initial Effective Date
Equity	Common Stock, par value \$0.0001 per share(7)	8,566,666	\$ 31,696,665	S-1	333-262319	January 24, 2022
Equity	Common Stock, par value \$0.0001 per share(7)	124,749,204	\$ 461,572,055	S-1	333-262319	January 24, 2022
Equity	Warrants(7)	233,333	(8)	S-1	333-262319	January 24, 2022

(1) Separate consideration may or may not be received for securities that are issuable upon the conversion or exercise of, or in exchange for, other securities offered hereby.

- (2) There are being registered hereunder such indeterminate number of shares of common stock and preferred stock, such indeterminate number of rights and units, such indeterminate principal amount of debt securities and such indeterminate number of warrants to purchase common stock, preferred stock, rights, units and/or debt securities to be sold by the Registrant from time to time at unspecified prices which shall have an aggregate initial offering price not to exceed \$150,000,000. If any debt securities are issued at an original issue discount, then the principal amount of such debt securities shall be in such greater amount as shall result in an aggregate initial offering price not to exceed \$150,000,000, less the aggregate dollar amount of all securities previously issued hereunder. The securities registered for sale also include such indeterminate number of shares of common stock and preferred stock and amount of debt securities as may be issued upon conversion of or exchange for preferred stock or debt securities that provide for conversion or exchange, upon exercise of warrants or rights or pursuant to the antidilution provisions of any such securities. In addition, pursuant to Rule 416 under the Securities Act of 1933, as amended (the "Securities Act"), the shares being registered hereunder include such indeterminate number of shares of common stock and preferred stock as may be issuable with respect to the shares being registered hereunder as a result of stock splits, stock dividends or similar transactions.
 - (3) The proposed maximum offering price per share will be determined, from time to time, by the Registrant in connection with the issuance by the Registrant of the securities registered hereunder and is not specified as to each class of security pursuant to Instruction 2.A.iii.b. to the Calculation of Filing Fee Tables and Related Disclosure on Item 16(b) of Form S-3 under the Securities Act.
 - (4) The proposed maximum aggregate offering price has been calculated pursuant to Rule 457(o) under the Securities Act.
 - (5) Consists of a total of 6,831,790 additional shares of common stock (including 163,333 shares of common stock issuable upon the exercise of the Private Warrants) registered for resale by the selling securityholders named in this registration statement comprised of (a) 6,668,457 shares, the filing fee for which were previously paid with the initial filing of this Registration Statement and (b) 163,333 shares of common stock, the filing fee for which has been paid in connection with the filing of Amendment No. 1 to this registration statement.
 - (6) Pursuant to Rule 457(c) under the Securities Act, and solely for the purpose of calculating the registration fee, the proposed maximum offering price per share for (a) the 6,831,790 shares, the filing fee for which was previously paid with the initial filing of this registration statement on April 6, 2023, is \$0.25, which was the average of the high and low prices of the shares of common stock on April 5, 2023 on the New York Stock Exchange and (b) the 163,333 shares, the filing fee for which has been paid in connection with the filing of Amendment No. 1 to this registration statement, is \$0.28, which was the average of the high and low prices of the shares of common stock on May 8, 2023 on the New York Stock Exchange.
 - (7) No registration fee is payable in connection with the 133,315,870 shares of common stock (including common stock underlying warrants) and 233,333 warrants that were previously registered under the registration statement on Form S-1 (No. 333-262319), initially filed by Heliogen, Inc. on January 24, 2022, and declared effective on February 3, 2022, as most recently amended by Post-Effective Amendment No. 3 to Form S-1 on Form S-3, filed on March 30, 2023 and declared effective on April 5, 2023 (the "Prior Registration Statement," as amended and/or supplemented), because such shares and warrants are being transferred from the Prior Registration Statement pursuant to Rule 429 under the Securities Act. Pursuant to Rule 429(b) under the Securities Act, this registration statement, upon effectiveness, will constitute a post-effective amendment to the Prior Registration Statement, which post-effective amendment shall hereafter become effective concurrently with the effectiveness of this registration statement and in accordance with Section 8(c) of the Securities Act. See "Statement Pursuant to Rule 429" in this registration statement.
 - (8) Pursuant to Rule 457(g) of the Securities Act, no separate fee is recorded for the warrants and the entire fee is allocated to the underlying common stock.
-