

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

FORM 10-K/A
(Amendment No. 1)

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

For the fiscal year ended December 31, 2021

OR

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

For the transition period from _____ to _____

Commission File Number: 001-40209

Heliogen, Inc.

(Exact name of registrant as specified in its charter)

Delaware

(State or other jurisdiction of
incorporation or organization)

85-4204953

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

130 West Union Street, Pasadena California

(Address of Principal Executive Offices)

91103

(Zip Code)

(626) 720-4530

Registrant's telephone number, including area code

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common stock, \$0.0001 par value per share	HLGN	New York Stock Exchange
Warrants, each whole warrant exercisable for shares of Common stock at an exercise price of \$11.50 per share	HLGN.W	New York Stock Exchange

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

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

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

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

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

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

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

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

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report.

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

The aggregate market value of voting stock held by non-affiliates of the Registrant on June 30, 2021, based on the closing price for shares of the Registrant's common stock as reported by the New York Stock Exchange on such date, was approximately \$242.5 million. Shares of common stock beneficially owned by each executive officer, director, and holder of more than 10% of our common stock have been excluded from this calculation because such persons may be deemed to be affiliates. This determination of affiliate status is not necessarily a conclusive determination for other purposes.

The registrant had 188,749,042 shares of common stock outstanding as of May 16, 2022.

DOCUMENTS INCORPORATED BY REFERENCE

None.

Introductory Note

On December 30, 2021 (the “Closing Date”), Heliogen, Inc., a Delaware corporation (“Legacy Heliogen”), Athena Technology Acquisition Corp., a Delaware corporation (“Athena”), Heliomax Merger Sub, Inc., a Delaware corporation and a direct, wholly owned subsidiary of Athena (“Merger Sub”), consummated the closing of the transactions contemplated by the Business Combination Agreement, dated July 6, 2021, by and among Athena, Merger Sub, and Legacy Heliogen (the “Business Combination Agreement”), following the approval at a special meeting of the stockholders of Athena held on December 28, 2021 (the “Special Meeting”).

Pursuant to the terms of the Business Combination Agreement, a business combination of Legacy Heliogen and Athena was effected by the merger of Merger Sub with and into Legacy Heliogen, with Legacy Heliogen surviving the Merger as a wholly owned subsidiary of Athena (the “Merger,” and, together with the other transactions contemplated by the Business Combination Agreement, the “Business Combination”). In connection with the consummation of the Merger on the Closing Date, Athena changed its name from Athena Technology Acquisition Corp. to Heliogen, Inc. (the “Company”) and Legacy Heliogen changed its name from Heliogen, Inc. to Heliogen Holdings, Inc.

Unless the context indicates otherwise, references in this Annual Report on Form 10-K/A to the “Company,” “Heliogen,” “we,” “us,” “our” and similar terms refer to Heliogen, Inc. and its consolidated subsidiaries (including Legacy Heliogen). References to “Athena” refer to the predecessor company prior to the consummation of the Business Combination.

Explanatory Note

The Company is filing this amendment No. 1 on Form 10-K/A (“Form 10-K/A”) to amend our Annual Report on Form 10-K for the year ended December 31, 2021, originally filed with the Securities and Exchange Commission (the SEC) on March 31, 2022 (the “Original Report”), to restate our consolidated financial statements and related footnote disclosures as of December 31, 2021 and for the year then ended. This Form 10-K/A also amends certain other Items in the Original Report, as listed in “Items Amended in this Form 10-K/A” below.

Restatement Background

On May 16, 2022, the audit committee of the board of directors (the “Audit Committee”) of the Company, based on the recommendation of, and after consultation with, the Company’s management concluded that the Company’s previously issued audited financial statements as of and for the year ended December 31, 2021, should no longer be relied upon. As part of the Company’s accounting for revenue contracts with customers during the first quarter of 2022, management considered ongoing contracts that were entered into and accounted for during the year ended December 31, 2021. During this evaluation, it was determined that a government contract which had previously been assessed as within the scope of ASC 606, *Revenue from Contract with Customers* (“ASC 606”), should have been accounted for as a government grant and therefore not within the scope of ASC 606. The impact of this revised conclusion resulted in (i) the separate presentation of amounts previously presented as revenue and cost of revenue as grant revenue and cost of grant revenue, respectively, (ii) no change to total revenue, and (iii) a reduction in total cost of revenue, including the reversal of a contract loss recognized during the year ended December 31, 2021. The change in our accounting of the government contract resulted in changes to our consolidated balance sheet as of December 31, 2021, our consolidated statements of operations and comprehensive loss, consolidated statement of convertible preferred stock and shareholder’s equity (deficit), and consolidated statement of cash flows, each for the year ended December 31, 2021, and the Company’s loss per share. Additionally, management recorded an immaterial correction resulting in an increase to cost of revenue and a decrease to selling, general and administrative expense that was separate from the change in accounting of the government contract. No adjustments were identified as of and for the year ended December 31, 2020.

Items Amended in this Form 10-K/A

This Form 10-K/A presents the Original Report, amended and restated with modifications as necessary to reflect the restatements. The following items have been amended to reflect the restatement:

- Part I, Item 1A. Risk Factors
- Part II, Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations
- Part II, Item 8. Financial Statements and Supplementary Data
- Part II, Item 9A. Controls and Procedures
- Part IV, Item 15. Exhibits and Financial Statement Schedules

In addition, in connection with this Form 10-K/A, the Company’s Chief Executive Officer and Chief Financial Officer have provided new certifications dated as of the date of this filing (Exhibits 31.1, 31.2, 32.1 and 32.2) and the Company is also filing a Consent of Independent Registered Public Accounting Firm (Exhibit 23.1). Except as described above, this Form 10-K/A does not amend, update or change any other items or disclosures in the Original Report and does not purport to reflect any information or events subsequent to the filing thereof. As such, this Form 10-K/A speaks only as of the date the Original Report was filed, and we have not undertaken herein to amend, supplement or update any information contained in the Original Report to give effect to any subsequent events. Accordingly, this Form 10-K/A should be read in conjunction with our Original Report and our other filings made with the SEC subsequent to the filing of the Original Report, including any amendments to those filings.

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Cautionary Note Regarding Forward-Looking Statements

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

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

- our ability to recognize the anticipated benefits of the Business Combination, which may be affected by, among other things, our ability to grow and manage growth profitably;
- our financial and business performance, including risk of uncertainty in our financial projections and business metrics and any underlying assumptions thereunder;
- changes in our business and strategy, future operations, financial position, estimated revenues and losses, projected costs, prospects and plans;
- our ability to execute our business model, including market acceptance of our planned products and services and achieving sufficient production volumes at acceptable quality levels and prices;
- changes in domestic and foreign business, market, financial, political, legal conditions and applicable laws and regulations;
- our ability to grow market share in our existing markets or new markets we may enter;
- our ability to achieve and maintain profitability in the future;
- our ability to access sources of capital to finance operations, growth and future capital requirements;
- our ability to maintain and enhance our products and brand, and to attract and retain customers;
- our ability to find new partners for product offerings;
- the success of strategic relationships with third parties;
- our ability to scale in a cost-effective manner;
- developments and projections relating to our competitors and industry;
- the impact of the COVID-19 pandemic, and Russia's invasion of Ukraine on our business, including, but not limited to, supply chain disruptions;

- our expectations regarding our ability to obtain and maintain intellectual property protection and not infringe on the rights of others;
- expectations regarding the time during which we will be an emerging growth company under the Jumpstart Our Business Startups Act of 2012 (the “JOBS Act”), as amended;
- our ability to find and retain critical employee talent and key personnel;
- the possibility that we may be adversely impacted by other economic, business, and/or competitive factors;
- future exchange and interest rates;
- the outcome of any known and unknown litigation and regulatory proceedings; and
- other risks and uncertainties, including those disclosed under “Item 1A. Risk Factors” contained in Part I of this Annual Report on Form 10-K/A, and the risk factors and other cautionary statements contained in other filings that have been made or will be made with the SEC by the Company.

Given these risks and uncertainties, you should not place undue reliance on these forward-looking statements. Should one or more of the risks or uncertainties described in this Annual Report on Form 10-K/A, 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 may be disclosed under “Item 1A. Risk Factors” contained in Part I of this Annual Report on Form 10-K/A and in our periodic filings with the SEC. Our SEC filings are available publicly on the SEC’s website at www.sec.gov.

You should read this Annual Report on Form 10-K/A 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.

Summary Risk Factors

The following is a summary of some of the risks and uncertainties that could materially adversely affect our business, financial condition and results of operations. This summary should be read together with the more detailed description of each risk factor disclosed under “Item 1A Risk Factors” contained in Part I of this Annual Report on Form 10-K/A.

Risks Relating to our Business

- If demand for our concentrated solar energy solutions does not develop as we expect or if our estimates of market opportunity and forecasts of market growth prove to be inaccurate, our revenues may suffer, and our business may be harmed.
- Our modular, AI-enabled, concentrated solar energy plants may not generate expected output levels.
- We may not be able to develop technologies and products to satisfy changes in customer demand or industry standards, and our competitors could develop products that decrease the demand for our products.
- If we fail to win new contracts and purchase orders, our business operations and financial results may be adversely affected.
- If we are not able to successfully manage our growth strategy, our business operations and financial results may be adversely affected.
- An increase in the prices of certain materials and commodities used in our business could adversely affect our business.
- We may be unable to complete or operate our projects on a profitable basis or as we have committed to our customers.
- The development of our modular, AI-enabled, concentrated solar energy will require significant capital, which our customers may finance through third parties, and such financing may not be available to our customers on favorable terms, if at all.
- We may require significant additional capital to pursue our growth strategy, but we may not be able to obtain additional financing on acceptable terms or at all.
- Project development or construction activities may not be successful, and we may make significant investments without first obtaining project financing, which could increase our costs and impair our ability to recover our investments.
- We have a history of operating losses and expect to incur significant additional expenses and operating losses.
- Our revenue, expenses, and operating results may fluctuate significantly.
- Failure of third parties to manufacture quality products or provide reliable services in a timely manner could cause delays in the delivery of our services and completion of our projects, which could damage our reputation, have a negative impact on our relationships with our customers and adversely affect our growth.
- Our business depends on experienced and skilled personnel and substantial specialty subcontractor resources, and if we lose key personnel or if we are unable to attract and integrate additional skilled personnel, it will be more difficult for us to manage our business and complete projects.

- We expect to operate in a highly competitive industry, and our current or future competitors may be able to compete more effectively than we do, which could have a material adverse effect on our business, revenues, growth rates and market share.
- International expansion is one of our growth strategies, and our potential expansion into international markets may expose our business and operations to additional risks that we do not or will not face in the United States, which could have an adverse effect on our operating results.

- An inability to protect our intellectual property could negatively affect our ability to compete, our business, and our results of operations.
- Certain of our facilities are or may be located in regions that may be affected by extreme weather conditions and natural disasters.
- Computer malware, viruses, ransomware, hacking, phishing attacks and other network disruptions could result in security and privacy breaches, loss of proprietary information and interruption in service, which would harm our business.
- We have identified material weaknesses in our internal control over financial reporting and any failure to maintain effective internal control over financial reporting, may have a material and adverse effect on our business, operating results, financial condition and prospects.
- Our business benefits in part from federal, state, provincial and local government support for renewable energy, and a decline in such support could harm our business.
- Legislative or regulatory actions relating to renewable energy may impact demand for our services, our ability to remain in compliance with applicable laws, and our cost of operations.
- Opportunities associated with government contracts could lead to increased governmental regulation applicable to us.

Part I

Item 1. Business

Overview

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

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

The three use categories 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 — Building on the power system described above, hydrogen fuel production will be enabled by further adding an electrolyzer system to the baseline system.

For the power and hydrogen systems, Heliogen is developing a supercritical CO2 Brayton cycle power block to enhance production efficiency. Using supercritical CO2 is predicted by the U.S. Department of Energy to have “significantly lower capital costs than equivalent steam-cycle components, due to their compact footprint stemming from the higher energy density of the supercritical fluid.”

Products & Services

Heliogen’s business focuses on the development and deployment of our innovative CSE technology. The main components of our CSE technology include heliostat fields and associated control systems, solar receivers, thermal energy storage, and heat engines. A heliostat is a mirror affixed to a two-axis tracking mechanism which allows it to move in a trajectory that places its reflected beam of sunlight onto a desired point. A heliostat field is a large array of many heliostats, all operating in coordination to focus their reflected beams onto a common location atop a tower located near or within the field. The solar receiver is the device mounted at that focal point which absorbs the highly concentrated solar energy and converts it to thermal energy in a heat transfer medium. The heat transfer medium then carries that thermal energy to the thermal energy storage (“TES”) system, where a large mass of material is brought to very high temperatures inside an insulated enclosure, acting as a thermal battery. When energy is needed, the heat transfer medium transfers thermal energy from the TES and delivers it to the thermal process being powered or, in the case of electricity generation, to the heat engine which converts thermal energy to electricity.

Because Heliogen’s technology is fundamentally a thermal energy source, we believe our products are particularly well-suited to meeting the thermal energy demand of industrial processes. As one example, many industrial facilities use steam to supply energy to their process. Heliogen’s technology, in the form of a HelioHeat plant, can supply this steam nearly 24/7 by collecting thermal energy while the sun is shining, storing it in the TES system, and using that thermal energy to supply heat to a boiler when the industrial process needs heat. Similarly, HelioHeat systems can be configured to supply hot air or to directly heat other industrial processes.

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

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

- Contracting with owner-operators to build turnkey facilities that deploy Heliogen's technology (Heliogen will contract with engineering, procurement and construction ("EPC") partners for constructing the facility);
- Selling heliostats (and associated software control systems) to owner-operators and/or EPC contractors;
- Providing asset maintenance support services during operation, for completed facilities that use Heliogen's technology and;
- Providing project development support services to help customers advance readiness to break ground in advance of final investment decisions.

In the future, we will also be prepared to offer Heliogen's IP through a licensing model to third parties interested in manufacturing and installing the hardware.

Raw Materials

The most important raw materials required for our CSE systems are steel (sheet, tube, bar, extrusions), stainless steel (pipe), glass (float glass), copper (wiring), aluminum (die castings, extrusions), commodity electrical & electronics components, ceramics & ceramic fibers, thermal insulation materials, bauxite particles and/or silica sand and concrete. Our components are produced by suppliers both domestically and internationally where most raw materials are readily available and purchased by those independent contractors and suppliers in the country of manufacture. Many major equipment and systems components are procured on a single or sole-source basis, but where multiple sources exist, we work to qualify multiple suppliers to minimize supply chain risk. We also mitigate risk by maintaining safety stock for key parts and assemblies with lengthy procurement lead times. We use a variety of agreements with suppliers to protect our intellectual property and processes to monitor and mitigate risks of the supply base causing a business disruption. The risks monitored include supplier financial viability, the ability to increase or decrease production levels, business continuity, quality and delivery.

Growth and Market Opportunity

Growth

Heliogen's growth is tied to the global phenomenon commonly described as "the energy transition" – that is, the shift in energy supply from burning fossil fuels to harnessing low-carbon and renewable sources of energy. Data linking the role of carbon emissions in accelerating climate change has led to shareholders and activists applying pressure to companies and governments to take action. This trend has been on the rise since the signing of the Paris Agreement in 2015, led largely by Europe. As a result, the energy transition has become a major focus of both private and public sector leaders around the world. Companies and governments have begun setting ambitious goals to reduce greenhouse gas ("GHG") emissions and to use renewable resources to sustainably power their operations.

2

Heliogen's growth strategy is to harness the significant demand by delivering technology that enables scalable, distributed, solar-thermal energy plants that can create heat, steam, power, and "clean" hydrogen– i.e., without the carbon emissions produced by fossil fuel energy sources. Our solutions target the end markets with a need for heat, electric power, and hydrogen. Such markets include the oil & gas, power, cement, steel, and mining industries.

Heliogen's technology platform allows modular plants for heat, steam, power, and/or hydrogen to be built at customer locations. The Company's strategy to achieve scale is through modularity and repeatability, with minimal custom re-engineering compared to prior iterations of this technology. The majority of the plant will be built in a factory that can be scaled to produce many plants per year. Heliogen will be able to further scale by replicating that factory in multiple regions as the company expands globally.

Leveraging the modularity of the system and repeatability of its implementation, in the near to medium term, Heliogen will partner with contractors and other supply chain participants to execute projects. In the long term, the Company expects to license its core, patent-protected technology to owner-operators and EPC companies who can each deploy many plants, to achieve a scale and growth trajectory that can take advantage of the size of the market opportunity. Licensing could enable Heliogen to improve the pace of our deployments, as well as increase our profit margins, beyond what could be achieved solely through our direct implementation.

In order to support Heliogen's growth as described above, we will continue its dedication to research and development and to iterating on its novel combination and integration of hardware and software. We are working to harness our specialty of using more software, more automation, more robotics, and more algorithms to reduce the quantity of materials, the amount of human labor, and the duration of time required to deliver our projects at scale.

Geographically we are focused initially on the U.S., but plan to position the Company to respond to global demand in locations with strong solar resource such as Mexico, South America, Australia, Africa and parts of Europe in the future. Global energy demand is expected to increase by 35% in the next two decades, due to an increase in population and the economic growth of developing countries. Demand for carbon-free replacements for current energy sources will further increase the demand for Heliogen's products.

Addressable Market

Capital expenditure investments for solar and on- and off-shore wind capacity between 2020 and 2030 are projected to be approximately \$8.5 trillion globally in order to achieve the carbon emissions reductions that would support the 1.5 degree global warming target established by the Paris Agreement. The global renewable energy market was valued at \$881.7 billion in 2020, and is projected to reach \$1,977.6 billion by 2030, representing a compound annual growth rate ("CAGR") of 8.4% between 2021 and 2030. The global renewable energy market is expected to continue its upward growth over the next years, reaching \$1.1 trillion by 2027. At the same time, the global total addressable market for energy storage is predicted to reach approximately \$56.0 billion by 2027 in comparison to \$8.0 billion in 2020, representing a CAGR of approximately 33%. Growing at a CAGR of approximately 43% between 2020 and 2027, the cumulative requirement for global storage capacity is expected to become a 534 gigawatt-hour ("GWh") opportunity in 2027.

We plan to also provide solutions for hydrogen production and industrial heat, so we believe our total addressable market is even larger. Our potential sales pipeline is diverse, ranging from utilities and independent power producers, oil and gas companies, mining and metals companies, and manufacturers of steel and cement. The worldwide energy industry generates annual revenues of approximately \$8.6 trillion. In addition, the worldwide clean energy market is expected to reach \$24 trillion by the end of the decade with industrial end use projected as the fastest growing end segment.

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Governments, corporations, and investors are making concerted efforts and setting aggressive targets to reduce GHG emissions and phase out fossil fuel use. Such initiatives include setting timelines for zero-emission targets, establishing caps on CO2 emissions, and instituting certain other environmental sustainability initiatives. For example, in the U.S., the Biden Administration has declared the following key environmental targets: (i) a carbon pollution-free power sector by 2035, (ii) a net-zero (i.e., carbon reduction is equal to or greater than carbon emissions) economy by 2050 and (iii) to achieve in 2030 a 50-52% reduction from 2005 levels in economy-wide net GHG pollution. In the private sector, companies have also committed to environmental sustainability initiatives. Leading financial and corporate institutions have requested that all boards of directors prepare and disclose a plan to be compatible with a net-zero economy and to commit to launching investment products aligned to a net-zero pathway. Individually and collectively, these initiatives support the increased demand for renewable fuels, transportation, energy storage, renewable power, low-carbon process heat, and energy efficiency.

The key driver for renewable energy generation and storage will be increased reliance on intermittent renewable energy resources like solar PV and wind. As penetration of these renewable sources increases, the intermittency of these resources can put strain on the grid if the operator is unable to fully match supply with demand. This strain can lead to an inability to supply power when it is needed and increased costs to consumers.

Energy storage can help reduce this strain. However, beyond a threshold level of renewable penetration, current solutions to energy storage, such as batteries, are insufficient to ensure grid reliability. Research from the National Renewable Energy Laboratory, a national laboratory of the U.S. Department of Energy, suggests that this threshold may be around 30% renewable penetration based on its Eastern Renewable Generation Integration Study; which found that the Eastern Interconnection, one of the largest power systems in the world, can accommodate upwards of 30% of wind and solar photovoltaic power. California is already at this level and we expect other specific geographies both in the United States and abroad will be there soon. Bloomberg New Energy Finance projects that the United States as a whole will exceed this target by 2029. In order to maintain system stability and achieve mandated decarbonization goals, longer duration energy storage options must be deployed. We believe Heliogen's technology will be among a small list of available technologies that will be able to respond to this energy storage need in order to maintain grid reliability.

Competition

We have experienced, and expect to continue to experience, strong competition from a number of alternative providers of energy technology, particularly as the economy increasingly shifts towards low-emission, zero-emission or carbon neutral solutions.

The traditional energy technology provider market is highly competitive. The declining cost of renewable energy is also contributing to the shift in customer demand as customers seek carbon-free solutions to replace their fossil fuel-based consumption, causing the industry to evolve and expand. The main competitive factors include, but are not limited to:

- Upfront and ongoing cost;
- Safety and reliability;
- Duration;
- Performance and uptime;
- Operational flexibility;
- Asset life length and cyclability;
- Ease of integration;
- Operability in extreme weather conditions;

- Environmental sustainability;
- Historical track record; and
- Field-proven technology.

With the rising demand for clean energy solutions with lower GHG emissions, there has been a transition to renewable energy sources. This industry transformation has created an opportunity for an increased role for thermal energy and long-duration energy storage solutions like what Heliogen will provide. As a pioneer of solar energy technology solutions that are well-suited for long duration applications, we believe we have a significant edge over our competition in this rapidly evolving environment. Our competitors include traditional fossil-fueled alternatives; providers of solutions combining solar PV with battery storage; and other forms of renewable energy. Our competitors may have greater financial, marketing, personnel and other resources than we do. Although we are small and at an earlier stage of commercial maturity compared to many of our competitors, we believe we are well-positioned to compete successfully in the market — based on our innovative closed loop tracking system, our HelioHeat, HelioPower and HelioFuel solutions, our strategic partnerships, and our premier leadership team with a proven track record of success across the energy industry and other industries.

New technologies may enter the market that may have additional or superior advantages to our future offerings. A variety of newer and emerging companies have announced plans to develop heat, power, hydrogen, and energy storage products using a variety of technologies, including compressed air, thermal energy, and solid-state batteries among others. Although many of these companies are not in commercial production today, they may in the future offer solutions that become competitive with our expected offerings. We intend to continuously improve our product offerings and maintain robust research and development efforts in order to stay ahead of existing and emerging competitors.

Competitive Strengths and Differentiation

As a result of factors described below, we believe that we are positioned to become a market leader in renewable energy technology.

Significant Head Start with Proprietary Technology and Ongoing Research & Development

We believe we have a first-mover advantage over other industry competitors as we have been committed since our founding in 2013 to the development of solar energy solutions that enable decarbonization of our economy. This is evidenced by our rich portfolio of intellectual property. We have demonstrated capability to concentrate sunlight to produce heat at temperatures ranging from 150 to 1,000 degrees centigrade, made possible by our first-of-a-kind ability to achieve high mirror adjustment accuracy. We have patented the most valuable parts of our technology at each stage of development. Beyond the patents, our journey as a company and the deep bench of

experience across our leadership team has provided and continues to provide invaluable learnings and technical know-how that we believe will be difficult to rival. We continue to develop and maintain our knowledge base, which we believe provides us with a substantial strategic head start and competitive advantage against competition in the concentrated solar energy and energy storage spaces. We also continue to target incremental and transformational improvements across all aspects of our technology in order to reduce costs and improve performance.

High-Temperature Thermal Energy Enabled by Closed-Loop Tracking System

Fundamental to Heliogen's offering is our proprietary heliostat design and artificial intelligence technology. We use proprietary advanced computer vision software technology — a form of artificial intelligence — to identify and precisely align an array of mirrors to reflect sunlight to a target on the top of a tower, creating high-temperature, carbon-free thermal energy. Our tracking system makes automatic micro-adjustments of the mirrors over the course of the day to account for the movement of the sun in the sky. These automatic adjustments, using a unique closed-loop feedback system, maximize solar concentration and energy capture, resulting in higher temperature heat than what has previously been provided by other approaches to concentrated solar energy technology. This opens up new opportunities to provide industrial process heat across a greater range of temperatures, as well as flexibility for a broader duration range of thermal energy storage. This system also enables the elimination of the expensive slew drive gearbox used in similar applications, eliminates time consuming and costly calibration processes, as well as a host of other benefits.

Near Always-Available Renewable Energy

At current renewables penetration across the U.S. energy market, most of the energy storage solutions on the market provide two to four-hour energy storage. Without efficient and scalable energy storage that can exceed such two to four-hour energy storage timeframes, renewable energy generation cannot meet continuous power demands of industrial customers and the grid. The peak demand curve is essentially the opposite of the solar peak curve, which leads to curtailment during the middle of the day. Heliogen expects to be able to generate, store, and provide renewable energy to match the existing demand curve. In addition, because of its superior storage solution, we believe Heliogen will be able to provide near constant energy throughout the day to produce hydrogen with an electrolyzer through low-cost energy storage. Heliogen's technology is designed to store the energy generated from concentrating the sun's rays into solid media — such as rocks, sand or ceramic material — in the form of heat. This type of storage is expected to be a lower cost form of storage compared to what other solar energy companies use, and it will be made possible by the high temperatures enabled by Heliogen's technology. Heliogen will store that energy, and then when it is needed, use a heat exchanger to bring that energy either to an engine, an industrial facility, or to an electrolyzer to make green hydrogen.

Modular and Scalable Plant Design

Heliogen's modular and scalable plant design accommodates growth to compete with large scale renewable projects. One of Heliogen's 5 MW modules can be replicated to meet larger customer demands. Depending on location, we expect to design each 5 MW module to high-capacity factor renewable power, with a future target of achieving less than 5 cents per kW-hour power cost, which would have the ability to ultimately generate over 850,000 kilograms of hydrogen year. Each module will be designed to occupy approximately a 1/6th square mile footprint (650m x 650m), which is smaller (on a per MWh basis) than existing large scale renewable energy projects. The plant's small footprint allows it to be sited alongside energy-hungry industrial facilities rather than in remote deserts.

This modular system is also designed to utilize mirrors (heliostats) smaller than traditional CSE mirrors, enabling our heliostats to be manufactured at scale in a repeatable process. By building modularly and shifting more assembly work from the construction field into the controlled conditions of a manufacturing facility, we expect to be able to scale more quickly and efficiently, while reducing overall costs compared to alternative approaches.

Competitive Forecast Economics

Historically, CSE companies have struggled to compete with PV solar due to high costs. However, while the cost of photovoltaic solar has decreased dramatically in the last decade, the issue of intermittency remains unresolved. In addition, PV does not offer an efficient solution for generating heat. As a result, PV solar may be uneconomical for many industrial processes that require heat and/or reliable delivery.

We believe our projected economics will be competitive with other prevalent sources of clean energy that include storage. For example, on a forward-looking basis, our future targets estimate a cost of less than 5 cents per MWh for power and less than \$2.00 per kilogram of hydrogen, which is competitive with alternative sources. This analysis assumes subsidized economics with 60% debt at an 8% interest rate and 40% equity at a 12% cost over a 30-year projection period. Additionally, these projections are based on expected cost reductions associated with manufacturing production efficiencies, module-enabled economies of scale, and mechanical improvements such as elimination of an expensive slew-drive gearbox that is enabled by the closed-loop tracking system.

International Expansion

After our initial projects, we forecast international expansion, focusing on capital efficiency enabled by our proprietary applications and agile heliostat manufacturing approach. We are in various stages of negotiation and discussion with numerous companies in Australia, South America and elsewhere. We also intend to leverage our strategic and commercial relationships with international footprints to cross-sell to foreign markets.

Highly Experienced Management Team Complements Visionary Founder

We have built a world-class team composed of industry leaders with decades of experience from some of the most well-known and highly regarded companies in the energy, solar, technology, manufacturing, and construction industries. Our committed, entrepreneurial team has decades of industry leading technical, operational, development and commercial experience. Such honed experience combined with our founder's solar energy expertise has positioned us to disrupt the current energy industry paradigms.

Intellectual Property

Our ability to protect our material intellectual property is important to our business. We rely upon a combination of foreign, federal, state, and common law protections afforded to owners of patents, copyrights, trade secrets, and trademarks, along with employee and third-party non-disclosure agreements and other contractual restrictions to establish and protect our intellectual property rights. In particular, unpatented trade secrets in the fields of research, development and engineering are an important aspect of our business by ensuring that our technology remains confidential. We also pursue patent protection when we believe we have developed a patentable invention and the benefits of obtaining a patent outweigh the risks of making the invention public through patent filings.

We hold a strong portfolio of patents and numerous trademarks covering key aspects of our plant and process, including our closed-loop tracking system, tracking

based on radiance maps, intensity and polarization tracking, and receiver for capturing solar energy. As of December 31, 2021, we had a portfolio of six issued U.S. patents, six issued non-U.S. patents, eight patent applications pending for examination in the U.S., eight U.S. provisional patent applications pending, and three patent applications pending for examination in other countries as well as numerous trademarks. However, our portfolio of patents is expected to evolve as new patents are issued, older patents expire, and we continue to innovate. Our U.S. issued patents have expiration dates ranging from September 2027 through October 2039. We regularly review our development efforts to assess the existence and patentability of new inventions, and we are prepared to file additional patent applications when we determine it would benefit our business to do so.

Government, Programs, Incentives and Regulations

We operate in the heavily regulated energy sector, which is subject to a variety of federal, state and local regulations and agencies that impact our operations. As a participant in the renewable energy sector specifically, there are additional regulations, tax incentives and support mechanisms in place to promote growth.

On the U.S. federal level, tax credits are currently in place that incentivize the deployment of renewable energy. Projects generating renewable energy are eligible for Investment Tax Credits that, with proper structuring, lower the capital requirements for renewables projects to be developed and open a new source of funding for these projects. The value of the tax credit varies depending on the year in which construction is deemed to begin. Under the current legislative framework, solar projects that were under construction by the end of 2019 qualify for a tax credit equal to 30% of the project's cost. The value drops to 26% for projects starting construction in 2020 through 2022, and 22% for projects starting construction in 2023. The credit drops to a permanent 10% level for projects that begin construction in 2024 or later. Projects that begin construction before 2024, but are not placed in service until 2026 or later, are also limited to the 10% credit.

The possibility of additional federal incentives and investment from the Biden administration and Congress has garnered enthusiasm among renewable energy developers. The administration has announced goals of decarbonizing the electricity sector entirely by 2035, a goal that would necessitate billions in additional investment. Some of this money is likely to be invested in solar, hydrogen, and storage technologies, potentially a benefit for a company like Heliogen. For example, the Bipartisan Infrastructure Law includes \$9.5 billion in funding for clean hydrogen, some of which will be applicable to companies which develop and install technology for clean hydrogen production.

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In addition, in early 2022, the U.S. Department of Energy Solar Energy Technologies Office announced funding for innovative research and development projects to accelerate the large-scale development of solar technologies that can deliver high-temperature solar heat on demand due to integration with thermal energy storage.

State-level incentives have also driven growth in the deployment of renewable energy. According to the National Conference of State Legislatures, as of July 31, 2021, thirty states, Washington, D.C., and two territories have active renewable or clean energy requirements, which mandate that a certain portion of electricity delivered to customers come from eligible renewable energy resources while an additional three states and one territory have set voluntary renewable energy goals. For example, California's renewable portfolio standards require that 60% of the state's electricity must come from renewable sources by 2030. States have created these standards to diversify their energy resources, promote domestic energy production and encourage economic development. Historically, unfavorable utility rate structures have been a barrier to increased deployment of renewable energy technologies. However, some states have recently mandated that a certain portion of that eligible renewable energy must be distributed generation.

Other Public Policy Considerations

Different public policy mechanisms have been used by governments to accelerate the adoption and use of solar power and energy storage. Examples of customer-focused financial mechanisms include capital cost rebates, performance-based incentives, feed-in tariffs, tax credits, and net energy metering. Some of these government mandates and economic incentives are scheduled to be reduced or to expire, or could be eliminated altogether, while others are scheduled to be extended or expanded. Capital cost rebates provide funds to customers based on the cost and size of a customer's solar power or energy storage system. Performance-based incentives provide funding to a customer based on the energy produced by their solar power system or stored by their energy storage system. Feed-in tariffs pay customers for solar power system generation based on energy produced, at a rate generally guaranteed for a period of time. Tax credits reduce a customer's taxes at the time the taxes are due. Net energy metering allows customers to deliver to the electric grid any excess electricity produced by their on-site solar power systems, and to be credited for that excess electricity at or near the full retail price of electricity. New market development mechanisms to encourage the use of renewable energy sources continue to emerge.

For more information about how we avail ourselves of the benefits of public policies and the risks related to public policies, please see the risk factors set forth under the caption "*Item 1A. Risk Factors.*"

Environmental and Other Regulations

We are subject to extensive environmental regulation, which has become more stringent over time. The laws and regulations to which we are subject govern, among others, vehicle emissions and the storage, handling, treatment, transportation and disposal of hazardous materials and the remediation of environmental contamination. Compliance with such laws and regulations at an international, regional, national, provincial and local level is an important aspect of our ability to continue our operations.

Environmental standards applicable to us are established by the laws and regulations of the countries in which we operate, standards adopted by regulatory agencies and the permits and licenses issued to us. Each of these sources is subject to periodic modifications and what we anticipate will be increasingly stringent requirements. Violations of these laws, regulations or permits and licenses may result in substantial administrative, civil or even criminal fines, penalties, and possibly orders to cease any violating operations or to conduct or pay for corrective works. In some instances, violations may also result in the suspension or revocation of permits or licenses.

We use, generate, and discharge toxic, volatile, or otherwise hazardous chemicals and wastes in our research and development, and construction activities. We are subject to a variety of U.S. federal and state laws and regulations related to the purchase, storage, use, and disposal of hazardous materials. We believe that we have all environmental permits necessary to conduct our business and expect to obtain all necessary environmental permits for future activities. We believe that we have properly handled our hazardous materials and wastes and have appropriately remediated any contamination at any of our premises. We are currently not subject to any litigation pertaining to environment regulations and cost of compliance with applicable regulations is expected to be commensurate with our historical spend and other companies in the industry.

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In addition to our existing environmental compliance initiatives, we will also be engaging additional resources to focus on a broader Environmental, Social and Governance ("ESG") program across our business. As part of our commitment to energy sustainability, our first step will be to complete an ESG assessment during 2022. This assessment will help the Company develop a baseline against which to prioritize its ESG strategies.

Finally, we are subject to federal, state, and local requirements on health, safety and employment. We are subject to the requirements of the Occupational Safety and

Health Act, local wage regulations and rigorous health and safety regulations in the State of California.

Human Capital

We take pride in our innovative technology and consider our employees to be the foundation for our growth and continued success. More than 80% of our employees have extensive experience or backgrounds in engineering, energy, or manufacturing. More than half of our employees are involved in product development and manufacturing. As of December 31, 2021, we employed 150 full-time employees, based primarily in Southern California.

Our high-performance culture is based on our commitment to results and our values, which we expect everyone to model in their daily conduct:

- **We are improving the world.** We will deliver affordable renewable energy, more economically than fossil fuels, benefitting the entire global community
- **We are bold.** We are bold, persistent and challenge the status quo in order to achieve technological breakthroughs and a profitable business
- **We treat everyone respectfully.** We are respectful, transparent, and collaborative. We maintain a safe environment for the well-being and inclusion of everyone
- **We value diversity.** We value and pursue diversity in all its forms, and welcome ideas and input from everyone.
- **We welcome feedback.** We are committed to feedback, continuous improvement, and learning, so everyone can contribute their best work with passion and enjoyment

We believe that an equitable and inclusive environment with diverse teams is crucial to our efforts to attract and retain key talent, produce more creative solutions and innovative products and services, and foster a work culture that reflects our core values. We have established a Diversity, Equity and Inclusion program, with the goal of developing a multi-year action plan to improve the diversity of our team and ensure every employee feels included and valued.

The COVID-19 pandemic had a significant impact on our human capital management strategies in 2021. We developed clear and effective worksite safety protocols, updated policies to add flexibility, and provided personal protective equipment to protect our essential employees working onsite in our manufacturing plant.

Available Information

Our website address is www.heliogen.com. We make available on our website, free of charge, our Annual Reports, our Quarterly Reports on Form 10-Q and our Current Reports on Form 8-K and any amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC. The SEC maintains a website that contains reports, proxy and information statements and other information regarding our filings at www.sec.gov. The information found on our website is not incorporated by reference into this Annual Report on Form 10-K or any other report we file with or furnish to the SEC.

Item 1A. Risk Factors

Investing in our securities involves a high degree of risk. You should carefully consider the risks and uncertainties described below together with all of the other information contained in this Annual Report on Form 10-K/A. If any of the events or developments described below were to occur, our business, annual report, operating results and financial condition could suffer materially, the trading price of our common stock could decline, and you could lose all or part of your investment. The risks and uncertainties described below are not the only ones we face. Additional risks and uncertainties not presently known to us or that we currently believe to be immaterial may also adversely affect our business.

Risks Relating to our Business

If demand for our concentrated solar energy solutions does not develop as we expect or our estimates of market opportunity and forecasts of market growth prove to be inaccurate, our revenues may suffer, and our business may be harmed.

Capital expenditure investments for solar and on- and off-shore wind capacity between 2020 and 2030 are projected to be approximately \$8.5 trillion globally in order to achieve the carbon emissions reductions that would support the 1.5 degree global warming target established by the Paris Agreement. At the same time, the global total addressable market for energy storage is predicted to reach approximately \$56.0 billion by 2027 in comparison to \$8.0 billion in 2020, representing a CAGR of approximately 33%. Growing at a CAGR of approximately 43% between 2020 and 2027, the cumulative requirement for global storage capacity is expected to become a 534 gigawatt-hour (“GWh”) opportunity in 2027. We believe, and our growth plans assume, that the market for solar energy solutions will continue to grow, that we will increase our penetration of this market and that our revenues from selling into this market will continue to increase over time. However, market opportunity estimates and growth and demand forecasts, whether obtained from third-party sources or developed internally, are subject to significant uncertainty and are based on assumptions and estimates that may prove to be inaccurate. The estimated addressable market may not materialize in the timeframe of the projections included herein, if ever, and even if the market meets the predicted size and growth estimates, our business could fail to grow at similar rates. If our expectations as to the size of this market or our ability to sell our products and services in this market are not correct, our revenues will suffer, and our business will be harmed.

Our modular, AI-enabled, concentrated solar energy plants may not generate expected output levels.

The modular, AI-enabled, concentrated solar energy plants that we plan to construct will be subject to various operating risks that may cause them to generate less than expected amounts of output. These risks include a failure or degradation of our equipment, the equipment of our customers or that of our vendors; an inability to find suitable replacement equipment or parts; or a less than expected supply of solar insolation. Any extended interruption in a plant’s operation, or the failure of a plant for any reason to generate the expected amount of output, could have a material adverse effect on our business and operating results due to the damage to our reputation and the resulting dissatisfaction of the owner-operator.

We may not be able to develop technologies and products to satisfy changes in customer demand or industry standards, and our competitors could develop products that decrease the demand for our products.

Rapidly changing technologies and industry standards, along with frequent new product introductions, characterize the industries of many of our customers and potential customers. Our financial performance depends, in part, on our ability to design, develop, manufacture, assemble, test, market and support new products and technology enhancements on a timely and cost-effective basis.

We have not yet commercialized any of our products. Our principal focus has been on research and development activities to improve our technology and make our product offerings more attractive to potential customers. These activities are subject to various risks and uncertainties we are not able to control, including changes in customer demand or industry standards and the introduction of new or superior technologies by others. Moreover, any failure by us in the future to develop new technologies or to timely react to changes in existing technologies could materially delay our development of new products, which could result in product obsolescence, decreased revenues

and a loss of our market share to our competitors. In addition, products or technologies developed by others may render our products or technologies obsolete or non-competitive. Further, if our products are not in compliance with prevailing industry standards, such non-compliance could materially and adversely affect our financial condition, cash flows and results of operations.

If we fail to win new contracts and purchase orders, our business operations and financial results may be adversely affected.

Our business depends on our ability to win contracts and purchase orders with customers. Contract proposals and negotiations are complex and frequently involve a lengthy bidding and selection process, which is affected by a number of factors. These factors may include market conditions, financing arrangements, and required governmental approvals. For example, a client may require us to provide a bond or letter of credit to protect the client should we fail to perform under the terms of the contract. If negative market conditions arise, or if we fail to secure adequate financial arrangements or the required government approvals, we may not be able to pursue particular projects, which could adversely affect our profitability. If we fail to complete a project in a timely manner, miss a required performance standard, or otherwise fail to adequately perform on a project, we may incur a loss on that project, which may reduce or eliminate our overall profitability.

Our engagements will involve complex projects. The quality of our performance on such projects depends in large part upon our ability to manage the relationship with our clients and our ability to effectively manage the project and deploy appropriate resources, including third-party contractors and our own personnel, in a timely manner. If a project is not completed by the scheduled date or fails to meet required performance standards, we may either incur significant additional costs or be held responsible for the costs incurred by the client to rectify damages due to late completion or failure to achieve the required performance standards. The performance of projects can be affected by a number of factors including unavoidable delays from suppliers and subcontractors, government inaction, public opposition, inability to obtain financing, weather conditions, unavailability of vendor materials, changes in the project scope of services requested by our clients, industrial accidents, environmental hazards and labor disruptions. To the extent these events occur, the total costs of the project could exceed our estimates and we could experience reduced profits or, in some cases, incur a loss on a project, which may reduce or eliminate our overall profitability. Further, any defects or errors, or failures to meet our clients' expectations, could result in claims for damages against us.

If we are not able to successfully manage our growth strategy, our business operations and financial results may be adversely affected.

Our expected future growth presents numerous managerial, administrative and operational challenges. Our ability to manage the growth of our operations will require us to continue to improve our management information systems and our other internal systems and controls. In addition, our growth will increase our need to attract, develop, motivate, and retain both our management and professional employees. The inability of our management to effectively manage our growth or the inability of our employees to achieve anticipated performance could have a material adverse effect on our business.

An increase in the prices or changes in the supply and demand of certain materials and commodities used in our business could adversely affect our business.

For certain contracts, we are exposed to market risk of increases in certain commodity prices of materials. We are dependent on the availability of essential materials, parts and subassemblies from our suppliers and subcontractors. The most important raw materials required for our CSE systems are steel, stainless steel, glass, copper, aluminum, commodity electrical & electronics components, ceramics & ceramic fibers, thermal insulation materials, bauxite particles and/or silica sand and concrete. Prices and availability of these raw materials are subject to substantial fluctuations that are beyond our control due to factors such as supply and demand trends, energy costs, transportation costs, inflation, government regulations, global trade relationships, duties and tariffs, changes in currency exchange rates, price controls, general economic conditions and other unforeseen circumstances.

Our components are produced by third-party suppliers both domestically and internationally where most raw materials are readily available and purchased by those independent contractors and suppliers in the country of manufacture. Many major equipment and systems components are procured on a single or sole-source basis, but where multiple sources exist, we work to qualify multiple suppliers to minimize supply chain risk. We also mitigate risk by maintaining safety stock for key parts and assemblies with lengthy procurement lead times. We use a variety of agreements with suppliers to monitor and mitigate risks of the supply base causing a business disruption. The risks monitored include supplier financial viability, the ability to increase or decrease production levels, business continuity, quality and delivery. Although we will continue to monitor and develop partial mitigation strategies, if existing vendors are unable to supply the raw materials we require, we cannot predict if we will be able to obtain alternative vendors within the time frames that we require and at a comparable cost. For example, the COVID-19 pandemic has resulted in significant supply chain disruptions globally, and similar to other companies in our industry, we have observed significant commodity price inflation in recent months, in some cases by upwards of 30% to 100%. Russia's invasion of and military attacks on Ukraine, including indirect impacts as a result of sanctions and economic disruption, may further complicate existing supply chain constraints. Shortages, price increases and/or delays in shipments of our raw materials and purchased component parts, have occurred and may continue to occur in the future which may have a material adverse effect on our results of operations if we are unable to successfully mitigate the impact, such as steel, glass, concrete and adhesives, which are used as components of supplies or materials utilized in our operations.

In addition, our customers' capital budgets may be impacted by the prices of certain materials, and reduced customer spending could lead to fewer project awards and more competition. These prices could be materially impacted by general market conditions and other factors, including U.S. trade relationships with other countries, the imposition of tariffs, or political conditions. While we believe we can increase our prices to adjust for some price increases in commodities, there can be no assurance that price increases of commodities, if they were to occur, would be recoverable. Additionally, we expect many of our contracts to be fixed price, which would not allow us to adjust our prices and, as a result, increases in material costs could reduce our profitability with respect to such projects.

We may be unable to complete or operate our projects on a profitable basis or as we have committed to our customers.

Development, installation, construction, and commissioning of our concentrated solar energy plants, and maintenance support of our concentrated solar energy plants, entails many risks, including:

- failure to receive critical components and equipment that meet our design specifications and can be delivered on schedule,
- failure to obtain all necessary rights to land access and use,
- failure to receive quality and timely performance of third-party services,
- increases in the cost of labor, equipment and commodities needed to construct or maintain projects,
- permitting and other regulatory issues, license revocation and changes in legal requirements,

- shortages of equipment or skilled labor,
- unforeseen engineering problems,
- failure of a customer to accept or pay for the HelioHeat, HelioPower and HelioFuel solutions that we supply,
- weather interferences, catastrophic events including fires, explosions, earthquakes, droughts and acts of terrorism,
- accidents involving personal injury or the loss of life,
- health or similar issues, such as a pandemic or epidemic, such as the novel coronavirus (COVID-19),
- labor disputes and work stoppages,
- mishandling of hazardous substances and waste, and
- other events outside of our control.

Any of these factors could give rise to construction delays and construction and other costs in excess of our expectations. This could prevent us from completing construction of our projects, cause defaults under any then-existing financing agreements or under contracts that require completion of project construction by a certain time, cause projects to be unprofitable for us, or otherwise impair our business, financial condition and operating results.

The development of our modular, AI-enabled, concentrated solar energy plants will require significant capital, which our customers may finance through third parties, and such financing may not be available to our customers on favorable terms, if at all.

We expect that our projects for customers will typically be financed by third parties. For the modular, AI-enabled, concentrated solar energy plants that we develop, we expect our customers to rely on a combination of their balance sheets and project-finance debt to fund construction costs. If our customers are unable to raise funds on acceptable terms when needed, we may be unable to secure customer contracts, the size of contracts we do obtain may be smaller or we could be required to delay the development and construction of projects, reduce the scope of those projects or otherwise restrict our operations. Any inability by our customers to raise the funds necessary to finance our projects could materially harm our business, financial condition and operating results.

We may require significant additional capital to pursue our growth strategy, but we may not be able to obtain additional financing on acceptable terms or at all.

The growth of our business will depend on substantial amounts of additional capital for marketing and development of our HelioHeat, HelioPower and HelioFuel solutions, and posting financial assurances in order to enter into contracts with customers. Our capital requirements will depend on many factors, including the rate of our enhancements to our existing HelioHeat, HelioPower and HelioFuel solutions, and our expansion of sales and marketing and product development activities. In addition, we may consider strategic acquisitions of complementary businesses or technologies to grow our business, which could require significant capital and could increase our capital expenditures related to the future operation of acquired businesses or technologies. We may not be able to obtain loans or additional capital on acceptable terms or at all.

We expect our capital expenditures to continue to be significant in the foreseeable future as we expand our business, and that our level of capital expenditures will be significantly affected by customer demand for our HelioHeat, HelioPower and HelioFuel solutions. The fact that we have a limited operating history means we have limited historical data on the demand for our solutions. As a result, our future capital requirements may be uncertain and actual capital requirements may be different from those we currently anticipate. We may need to seek equity or debt financing to finance a portion of our capital expenditures. Such financing might not be available to us in a timely manner or on terms that are acceptable, or at all.

Our ability to obtain the necessary financing to carry out our business plan is subject to a number of factors, including general market conditions and investor acceptance of our business model. These factors may make the timing, amount, terms and conditions of such financing unattractive or unavailable to us. If we are unable to raise sufficient funds, we will have to significantly reduce our spending, delay or cancel our planned activities or substantially change our corporate structure. We might not be able to obtain any funding, and we might not have sufficient resources to conduct our business as projected, both of which could mean that we would be forced to curtail or discontinue our operations.

In addition, our future capital needs and other business reasons could require us to sell additional equity or debt securities or obtain a credit facility. The sale of additional equity or equity-linked securities could dilute our stockholders. The incurrence of indebtedness would result in increased debt service obligations and could result in operating and financing covenants that may restrict our operations or our ability to pay dividends to our stockholders.

If we cannot raise additional funds when we need or want them, our operations and prospects could be negatively affected.

Project development or construction activities may not be successful, and we may make significant investments without first obtaining project financing, which could increase our costs and impair our ability to recover our investments.

The development and construction of modular, AI-enabled, concentrated solar energy plants involves numerous risks. We may be required to spend significant sums for preliminary engineering, permitting, legal and other expenses before we can determine whether a project is feasible, economically attractive or capable of being built. In addition, we may choose to bear the costs of such efforts prior to obtaining project financing, prior to getting final regulatory approval and/or prior to our final sale to a customer, if any.

Successful completion of a particular project may be adversely affected by numerous factors, including: failures or delays in obtaining desired or necessary land rights, including ownership, leases and/or easements; failures or delays in obtaining necessary permits, licenses or other governmental support or approvals, or in overcoming objections from members of the public or adjoining land owners; uncertainties relating to land costs for projects; unforeseen engineering problems; access to available transmission for energy generated by our modular, AI-enabled, concentrated solar energy plants; construction delays and contractor performance shortfalls; work stoppages or labor disruptions and compliance with labor regulations; cost over-runs; availability of products and components from suppliers; adverse weather conditions; environmental, archaeological and geological conditions; and availability of construction and permanent financing.

If we are unable to complete the development of one or more of our modular, AI-enabled, concentrated solar energy plants or fail to meet one or more agreed target

construction milestone dates, we may incur losses or be liable for damages or penalties that we are not be able to offset, which would have an adverse impact on our net income in the period in which the loss is recognized. We expect that some projects will require working capital to develop and/or build projects. If we are unable to complete a project, the associated working capital would also be an exposure that may need to be written off, which would have an adverse impact on our net income in the period in which the loss is recognized.

We have a history of operating losses and expect to incur significant additional expenses and operating losses.

We are an early-stage company and have a history of operating losses and negative operating cash flows. We incurred a net loss of \$137.4 million and \$7.4 million for the years ended December 31, 2021 and 2020, respectively. We expect that we will continue to incur operating and net losses for the medium term. The amount of future losses and when, if ever, we will achieve profitability are uncertain. In addition, even if we achieve profitability, there can be no assurance that we will be able to maintain profitability in the future. Our potential profitability is particularly dependent upon the growth of the market for renewable energy solutions, which may not occur at the levels we currently anticipate or at all.

Our revenue, expenses, and operating results may fluctuate significantly.

Our revenue, expenses, and operating results may fluctuate significantly because of numerous factors, some of which may contribute to more pronounced fluctuations in an uncertain global economic environment. In addition to the other risks described in this “Risk Factors” section, the following factors could cause our operating results to fluctuate:

- delays, increased costs, or other unanticipated changes in contract performance that may affect profitability, particularly with lumpsum contracts or contracts that have funding limits,
- spending patterns of our private and public sector clients,
- weather conditions
- budget constraints experienced by our federal, state, and local government clients,
- our ability to integrate any companies that we acquire,
- the number and significance of client contracts commenced and completed during a quarter,
- the continuing creditworthiness and solvency of clients,
- reductions in the prices of products or services offered by our competitors, and
- legislative and regulatory enforcement policy changes that may affect demand for our products or services.

As a consequence, operating results for a particular future period are difficult to predict and, therefore, prior results are not necessarily indicative of results to be expected in future periods. Any of the foregoing factors, or any other factors discussed elsewhere herein, could have a material adverse effect on our business, results of operations and financial condition that could adversely affect our stock price.

Failure of third parties to manufacture quality products or provide reliable services in a timely manner could cause delays in the delivery of our services and completion of our projects, which could damage our reputation, have a negative impact on our relationships with our customers and adversely affect our growth.

Our success depends on our ability to provide services and complete projects in a timely manner, which in part depends on the ability of third parties to provide us with timely and reliable products and services. In providing our services and completing our projects, we rely on products that meet our design specifications and components manufactured and supplied by third parties, as well as on services performed by subcontractors.

We will also rely on subcontractors to perform the majority of the construction work related to our projects; and we may need to engage subcontractors with whom we have no experience for our projects.

If any of our subcontractors are unable to provide services that meet or exceed our customers’ expectations or satisfy our contractual commitments, our reputation, business and operating results could be harmed. In addition, if we are unable to avail ourselves of warranty and other contractual protections with providers of products and services, we may incur liability to our customers or additional costs related to the affected products and components, which could have a material adverse effect on our business, financial condition and operating results. Moreover, any delays, malfunctions, inefficiencies or interruptions in these products or services could adversely affect the quality and performance of our solutions and require considerable expense to establish alternate sources for such products and services. This could cause us to experience difficulty retaining current customers and attracting new customers, and could harm our brand, reputation and growth.

Our business depends on experienced and skilled personnel and substantial specialty subcontractor resources, and if we lose key personnel or if we are unable to attract and integrate additional skilled personnel, it will be more difficult for us to manage our business and complete projects.

The success of our business and construction projects will depend in large part on the skill of our personnel and on trade labor resources, including those with certain specialty subcontractor skills. Competition for personnel, particularly those with expertise in the energy services and renewable energy industries, is high. In the event we are unable to attract, hire and retain the requisite personnel and subcontractors, we may experience delays in completing projects in accordance with project schedules and budgets.

Further, any increase in demand for personnel and specialty subcontractors may result in higher costs, causing us to exceed the budget on a project. Either of these circumstances may have an adverse effect on our business, financial condition and operating results, harm our reputation among and relationships with our customers and cause us to curtail our pursuit of new projects.

Our future success is particularly dependent on the vision, skills, experience and effort of our senior management team, including our executive officers and our founder, director and chief executive officer, Bill Gross. If we were to lose the services of any of our executive officers or key employees, our ability to effectively manage our operations and implement our strategy could be harmed and our business may suffer.

We expect to operate in a highly competitive industry, and our current or future competitors may be able to compete more effectively than we do, which could have a material adverse effect on our business, revenues, growth rates and market share.

The markets and industries in which we expect to compete in are highly competitive, with many companies of varying size and business models, many of which have their own proprietary technologies, competing for the same business as we do. Many of our competitors have longer operating histories and greater resources than us and could focus their substantial financial resources to develop a competitive advantage. Our competitors may also offer energy solutions at prices below cost, devote significant sales forces to competing with us or attempt to recruit our key personnel by increasing compensation, any of which could improve their competitive positions. Additionally, we expect competition to intensify in the future as existing competitors and new market entrants introduce new products into our markets. Any of these competitive factors could make it more difficult for us to attract and retain customers, increase our sales and marketing expenses, reduce profit margins, cause us to lower our prices in order to compete, and reduce our market share and revenues, any of which could have a material adverse effect on our financial condition and operating results. We can provide no assurance that we will continue to effectively compete against our current competitors or additional companies that may enter our markets.

In addition, we may also face competition based on technological developments that compete with our products and services. Our competitors may develop technology that would make ours noncompetitive or obsolete. If we do not keep pace with product and technology advances and otherwise keep our product offerings competitive, there could be a material and adverse effect on our competitive position, revenue and prospects for growth. Some of our existing competitors, have, and some of our potential competitors could have, substantial competitive advantages such as:

- greater name recognition, longer operating histories and larger customer bases;
- larger sales and marketing budgets and resources;
- broader and deeper product lines;
- greater customer support resources;
- greater resources to make acquisitions;
- lower labor and research and development costs;
- substantially greater financial and other resources; and
- larger scale manufacturing operations.

Some of our expected larger competitors may have substantially broader product offerings and may be able to leverage their relationships with partners and customers based on other products to gain business in a manner that discourages potential customers from purchasing our concentrated solar energy plants, including by selling at zero or negative margins or product bundling. In addition, innovative start-up companies, and larger companies that are making significant investments in research and development, may invent similar or superior technologies that compete with ours. Our current and potential competitors may also establish cooperative relationships among themselves or with third parties that may further enhance their resources. If we are unable to compete successfully, or if competing successfully requires us to take costly actions in response to the actions of our competitors, our business, financial condition and results of operations could be adversely affected.

International expansion is one of our growth strategies, and our potential expansion into international markets may expose our business and operations to additional risks that we do not or will not face in the United States, which could have an adverse effect on our operating results.

As part of our business strategy, we intend to continue to consider the expansion of our addressable market by pursuing opportunities to provide our HelioHeat, HelioPower and HelioFuel solutions in international markets, and we expect to generate a material portion of our revenues from operations outside of the United States in the future. Operations in international markets may require us to respond to new and unanticipated regulatory, marketing, sales and other challenges. These efforts may be time-consuming and costly, and there can be no assurance that we will be successful in responding to these and other challenges we may face as we enter and attempt to expand in international markets, including:

- building and managing a highly experienced foreign workforce and overseeing and ensuring the performance of foreign subcontractors,
- difficulties in developing, staffing, and simultaneously managing a large number of varying foreign operations as a result of distance, language, and cultural differences,
- increased travel, infrastructure and legal and compliance costs associated with multiple international locations,

- additional withholding taxes or other taxes on our foreign income, and tariffs or other restrictions on foreign trade or investment,
- imposition of, or unexpected adverse changes in, foreign laws or regulatory requirements, many of which differ from those in the United States,
- increased exposure to foreign currency exchange rate risk,
- longer payment cycles for sales in some foreign countries and potential difficulties in enforcing contracts and collecting accounts receivable,
- difficulties in repatriating overseas earnings,
- compliance with numerous legislative, regulatory or market requirements of foreign countries,
- compliance with U.S. laws, such as the U.S. Foreign Corrupt Practices Act, or FCPA, and local laws prohibiting bribery and corrupt payments to government officials,
- laws and business practices that favor local competitors or prohibit foreign ownership of certain businesses,
- potentially adverse tax consequences,
- compliance with laws of foreign countries, international organizations, such as the European Commission, treaties, and other international laws,
- the inability to continue to benefit from local subsidies due to change in control,

- unfavorable labor regulations, and
- general economic conditions in the countries in which we operate.

Our future international operations will also be subject to general geopolitical risks, such as political, social and economic instability, war including the repercussions of the conflict in Ukraine), incidents of terrorism, changes in diplomatic and trade relations, or responses to such events. One or more of these factors could adversely affect any of our international operations and result in lower revenue and/or greater operating expenses than we expect and could significantly affect our results of operations and financial condition.

Our overall success in international markets will depend, in part, on our ability to succeed in differing legal, regulatory, economic, social and political conditions. We may not be successful in developing and implementing policies and strategies that will be effective in managing these risks in each country where we do business. Our failure to manage these risks successfully could harm our international operations, reduce our international sales and increase our costs, thus adversely affecting our business, financial condition and operating results.

An inability to protect our intellectual property could negatively affect our ability to compete, our business and our results of operations.

Our ability to compete effectively depends in part upon the maintenance and protection of the intellectual property related to our HelioHeat, HelioPower and HelioFuel solutions. As of December 31, 2021, we had a portfolio of six issued U.S. patents, six issued non-U.S. patents, eight patent applications pending for examination in the U.S., eight U.S. provisional patent applications pending, and three patent applications pending for examination in other countries as well as numerous trademarks. However, our portfolio of patents is expected to evolve as new patents are issued and older patents expire, and the expiration of patents could have a negative effect on our ability to prevent competitors from duplicating certain or all of our products.

We might not succeed in obtaining patents from any of our pending applications. Even if we are awarded patents, they may not provide any meaningful protection or commercial advantage to us, as they may not be of sufficient scope or strength or may not be issued in all countries where our products can be sold. Patent protection is unavailable for certain aspects of the technology and operational processes that are important to our business. Any patent held by us or to be issued to us, or any of our pending patent applications, could be challenged, invalidated, unenforceable or circumvented. In addition, our competitors may be able to design around our patents. To date, we have relied principally on patent, copyright, trademark and trade secret laws, as well as confidentiality and proprietary information agreements and licensing arrangements, to establish and protect our intellectual property. However, we have not obtained confidentiality and proprietary information agreements from our targeted customers and vendors, and although we have entered into confidentiality and proprietary information agreements with all of our employees, we cannot be certain that these agreements will be honored. Some customers are subject to laws and regulations that require them to disclose information that we would otherwise seek to keep confidential. Policing unauthorized use of our intellectual property is difficult and expensive, as is enforcing our rights against unauthorized use.

The steps that we have taken or may take may not prevent misappropriation of the intellectual property on which we rely. In addition, effective protection may be unavailable or limited in jurisdictions outside the United States, as the intellectual property laws of foreign countries sometimes offer less protection or have onerous filing requirements. From time to time, third parties may infringe our intellectual property rights. Litigation may be necessary to enforce or protect our rights or to determine the validity and scope of the rights of others. Any litigation could be unsuccessful, cause us to incur substantial costs, divert resources away from our daily operations and result in the impairment of our intellectual property. Failure to adequately enforce our rights could cause us to lose rights in our intellectual property and may negatively affect our business.

In addition to patent protection, we rely significantly upon trade secret laws to protect our proprietary technologies. We regularly enter into confidentiality agreements with our key employees, customers, potential customers and other third parties and limit access to and distribution of our trade secrets and other proprietary information. However, these measures may not be adequate to prevent misappropriation of our technologies or to assure that our competitors will not independently develop technologies that are substantially equivalent or superior to our technologies. In addition, the laws of other countries in which we operate may not protect our proprietary rights to the same extent as the laws of the United States. We are also subject to the risk of adverse claims and litigation alleging infringement of intellectual property rights.

Certain of our facilities are or may be located in regions that may be affected by extreme weather conditions and natural disasters.

Our business is headquartered in Southern California and we expect to have multiple facilities in California. Historically, California has been susceptible to natural disasters, such as earthquakes, drought, floods and wildfires. Although we intend to maintain loss insurance where necessary, an earthquake, wildfire or other natural disaster in the geographic regions in which we operate could result in significant damage to our facilities, destruction or disruption of our critical business or information technology systems, recovery costs and interruption to certain of our operations. In addition, a catastrophic event could interrupt our operations or those of our customers and suppliers, which could result in delays or cancellation of customer orders, the loss of customers, and impediments to the manufacture or shipment of products or execution of projects, which could result in loss of business or an increase in expense, both of which may have a material adverse effect on our business. Delays and other weather impacts could adversely affect our ability to meet project deadlines and may increase a project's cost and decrease its profitability. In the specific case of wildfires, an accusation or ultimate determination that our operations were the cause of a wildfire may also have a material adverse effect on our business. Moreover, we expect to have multiple facilities in other domestic and international markets, which may be subject to similar risks as California.

Computer malware, viruses, ransomware, hacking, phishing attacks and other network disruptions could result in security and privacy breaches, loss of proprietary information and interruption in service, which would harm our business.

Computer malware, viruses, physical or electronic break-ins and similar disruptions could lead to interruption and delays in our services and operations and loss, misuse or theft of data. Computer malware, viruses, ransomware, hacking, phishing attacks or denial of service, against online networks have become more prevalent and may occur on our systems. Any attempts by cyber attackers to disrupt our services or systems, if successful, could harm our business, introduce liability to data subjects, result in the misappropriation of funds, be expensive to remedy and damage our reputation or brand. Insurance may not be sufficient to cover significant expenses and losses related to cyber-attacks. Notwithstanding the security measures we have implemented, such as managed security services, that are designed to detect and protect against cyber-attacks, and any additional measures we may implement or adopt in the future, our facilities and systems, and those of our third-party service providers, could be vulnerable to security breaches, computer viruses, lost or misplaced data, programming errors, scams, burglary, human errors, acts of vandalism, or other events. The risk of such cyber-attacks may be heightened as a result of the Russian conflict with Ukraine. Efforts to prevent cyber attackers from entering computer systems are expensive to implement, and we may not be able to cause the implementation or enforcement of such preventions with respect to our third-party vendors. Though it is difficult to determine what, if any, harm may directly result from any specific interruption or attack, any failure to maintain performance, reliability, security and availability of systems and technical infrastructure may, in addition to other losses, harm our reputation, brand and ability to attract customers.

There are several factors ranging from human error to data corruption that could materially impact the efficacy of any processes and procedures designed to enable us to recover from a disaster or catastrophe, including by lengthening the time services are partially or fully unavailable to customers and users. It may be difficult or impossible to perform some or all recovery steps and continue normal business operations due to the nature of a particular cyber-attack, disaster or catastrophe or other disruption, especially during peak periods, which could cause additional reputational damages, or loss of revenues, any of which would adversely affect our business and financial results.

If we fail to introduce or acquire new products or services that achieve broad market acceptance on a timely basis, or if our products or services are not adopted as expected, we will not be able to compete effectively.

We operate in a highly competitive, quickly changing environment, and our future success depends on our ability to develop or acquire and market products and services that are recognized and accepted as reliable, enabling and cost-effective and that achieve broad market acceptance. Some of our potential customers may already use products or services similar to what we currently offer or what we may offer in the future and may be reluctant to replace those products or services. Market acceptance of our products, services and technology will depend on many factors, including, but not limited to, market demand costs, timely completion and introduction of these products, prompt resolution of any defects or bugs in these products, our ability to support these products, market acceptance of these products, delays and quality issues in releasing new products and services and our ability to convince potential customers that our products, services and technology are an attractive alternative to existing products, services and technology. Prior to adopting our products, services and technology, some potential customers may need to devote time and effort to testing and validating our systems. Any failure of our systems to meet these customer benchmarks could result in potential customers choosing to retain their existing systems or to purchase systems other than ours. The occurrence of one or more of the foregoing factors may result in lower quarterly revenue than expected, and we may in the future experience product or service introductions that fall short of their projected rates of market adoption.

Our ability to successfully introduce and market new products is unproven. Because we have a limited operating history and the market for our products, including newly acquired or developed products, is rapidly evolving, it is difficult to predict our operating results, particularly with respect to any new products that we may introduce. Our future success will depend in large part upon our ability to identify demand trends in the market in which we operate and quickly develop or acquire, and design, manufacture and sell, products and services that satisfy these demands in a cost-effective manner. Also, we may not be able to respond effectively to new product or service announcements by competitors by quickly introducing competitive products and services.

In order to differentiate our products and services from competitors' products, we will need to increase focus and capital investment in research and development, including software development. If any products currently sold by, and services offered by, us do not continue, or if our new products or services fail to achieve widespread market acceptance, or if we are unsuccessful in capitalizing on opportunities in the market in which we operate, our future growth may be slowed and our business, results of operations and financial condition could be materially adversely affected.

We have identified material weaknesses in our internal control over financial reporting and any failure to maintain effective internal control over financial reporting may have a material and adverse effect on our business, operating results, financial condition and prospects.

As discussed elsewhere in this Annual Report on Form 10-K/A, we completed the Business Combination on December 30, 2021. Prior to the closing of the Business Combination, we were a special purpose acquisition company formed for the purpose of effecting a merger, capital stock exchange, asset acquisition, stock purchase, reorganization or other similar business combination with one or more operating businesses. As a result of the Business Combination, previously existing internal controls are no longer applicable or comprehensive enough as of the assessment date as our operations prior to the Business Combination were insignificant compared to those of the post-combination Company. The design of internal control over financial reporting for the post-combination Company has required and will continue to require significant time and resources from management and other personnel. As a result, management was unable, without incurring unreasonable effort or expense to conduct an assessment of our internal control over financial reporting as of December 31, 2021. Accordingly, we are excluding management's report on internal control over financial reporting in accordance with Section 215.02 of the SEC Division of Corporation Finance's Regulation S-K Compliance & Disclosure Interpretations.

Although management did not conduct a formal assessment of internal control over financial reporting, in connection with the preparation and audit of our financial statements as of and for the fiscal year ended December 31, 2020, we identified material weaknesses, as described below, in our internal control over financial reporting, which is an integral component of our disclosure controls and procedures. A material weakness is a deficiency, or a combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of our annual or interim financial statements will not be prevented or detected on a timely basis. If we are unable to remediate these material weaknesses, or if we identify additional material weaknesses in the future or otherwise fail to maintain an effective system of internal controls, we may not be able to accurately or timely report our financial condition or results of operations, which may adversely affect investor confidence in us and, as a result, our stock price.

Our material weaknesses related to Heliogen not designing or maintaining an effective control environment specific to the areas of financial reporting and its close process, including effective review of technical accounting matters (e.g., revenue recognition), and proper segregation of duties, including separate review and approval of journal entries and access within our accounting system. Additionally, subsequent to filing our Annual Report on Form 10-K, management concluded that Heliogen's \$39 million award from the U.S. Department of Energy's Solar Energy Technology Office (the "DOE Award") represented a government grant and was not within the scope of ASC 606. As such, amounts recorded in relation to the DOE Award as of and for the year ended December 31, 2021 were restated as presented elsewhere in this revised Annual Report on Form 10-K/A. Management concluded this restatement resulted from the same material weakness previously identified relating to effective review of technical accounting matters.

We are currently taking actions to remediate the deficiencies in our internal control over financial reporting and are implementing additional processes and controls designed to address the underlying causes associated with the above-mentioned deficiencies. We are committed to remediating the deficiencies described above and commenced remediation efforts during 2021 that will continue into fiscal year 2022. Our efforts to implement measures designed to improve our internal control over financial reporting to remediate these deficiencies include the following steps taken in 2021:

- We added additional accounting resources, including a Chief Accounting Officer and head of SEC Reporting, who have the requisite background and knowledge in the application of GAAP and SEC rules and regulations.
- We engaged external experts to complement internal resources and to provide support related to more complex applications of GAAP, tax and internal controls. We will continue to utilize outside resources, as necessary, to supplement our internal team.
- We began the implementation of a new company-wide enterprise resource planning system. On October 1, 2021, we transitioned to our new enterprise resource planning system with improved information technology general controls, including segregated review and approval of journal entries. For 2022 and beyond, we have continued and will continue to implement incremental components of the enterprise resource planning system and other applications.

- We developed and improved recurring accounting processes providing more timely and detailed review of complex and routine areas.
- We formalized documentation of certain policies throughout the year.
- We enhanced our process in accounting for, and documenting our positions related to, complex accounting topics throughout the year, including, but not limited to, new controls in the areas of management review, segregation of duties, journal entry approval, and documentation and review of complex accounting matters.

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

Although the Company has made significant progress in remediating the aforementioned deficiencies as outlined above, the material weaknesses continued to exist as of December 31, 2021 due to identification of adjustments during the year ended December 31, 2021.

In addition, our independent registered public accounting firm is not required to formally attest to the effectiveness of the Company's internal control over financial reporting until after the Company is no longer an emerging growth company as defined in the JOBS Act. At such time, our independent registered public accounting firm may issue a report that is adverse in the event it is not satisfied with the level at which our internal control over financial reporting is documented, designed or operating. Any failure to maintain effective disclosure controls and internal control over financial reporting could adversely affect the business and operating results after the Business Combination and could cause a decline in the price of our shares.

Regulatory Risks

Our business benefits in part from federal, state, provincial and local government support for renewable energy, and a decline in such support could harm our business.

We benefit in part from legislation and government policies that support renewable energy, and energy storage projects that enhance the economic feasibility of our solar energy projects. This support includes legislation and regulations that encourage or in some cases require other customers to procure power from renewable or low-emission sources or otherwise to procure our services; and provide us or our customers with tax and other incentives that reduce our costs or increase our revenues. Without this support our ability obtain project commitments could be adversely affected.

Legislative or regulatory actions relating to renewable energy may impact demand for our services, our ability to remain in compliance with applicable laws, and our cost of operations.

We are subject to laws, regulations and rules enacted by national, regional and local governments. In particular, we are required to comply with certain SEC, New York Stock Exchange ("NYSE") and other legal or regulatory requirements. Compliance with, and monitoring of, applicable laws, regulations and rules may be difficult, time consuming and costly. Those laws, regulations and rules and their interpretation and application may also change from time to time and those changes could have a material adverse effect on our business, investments and results of operations. In addition, a failure to comply with applicable laws, regulations and rules, as interpreted and applied, could have a material adverse effect on our business and results of operations.

Current and potential legislative or regulatory actions may also impact demand for our services. However, it is unclear whether these initiatives will create sufficient incentives for projects or result in increased demand for our services. Because most of our revenue is expected to be derived from the energy and industrials market sectors, regulatory and environmental requirements affecting those industries could adversely affect our business, financial condition, results of operations and cash flows. Customers in the industries we serve, including oil & gas companies and power providers, face stringent regulatory and environmental requirements, as well as permitting processes, as they implement plans for their projects, which may result in delays, reductions and cancellations of some of their projects. These regulatory factors may result in decreased demand for our services, potentially impacting our operations and our ability to grow.

In addition, the locations of renewable energy projects, including the expected locations of our concentrated solar energy plants, are often remote and may not be viable unless new or expanded transmission infrastructure to transport the energy to demand centers is economically feasible. Furthermore, funding for renewable energy initiatives may not be available. These factors could result in fewer renewable energy projects and a delay in the construction of these projects and the related infrastructure, which could negatively impact our business.

Opportunities associated with government contracts could lead to increased governmental regulation applicable to us.

Most government contracts are awarded through a regulated competitive bidding process, including the award we received from the U.S. Department of Energy to deploy our renewable energy technology in California. We may incur significant costs associated with bidding for government contracts before we realize any revenues from these contracts. Government agencies may review a contractor's performance, cost structure and compliance with applicable laws, regulations and standards. If government agencies determine through these reviews that costs were improperly allocated to specific contracts, they will not reimburse the contractor for those costs or may require the contractor to refund previously reimbursed costs. If government agencies determine that we engaged in improper activity, we may be subject to civil and criminal penalties. Government contracts are also subject to renegotiation of profit and termination by the government prior to the expiration of the term.

Risks Related to Ownership of Shares and Warrants

There can be no assurance that we will be able to comply with the continued listing standards of the NYSE.

If we fail to satisfy the continued listing requirements of NYSE ("NYSE Listing Rules"), such as the corporate governance requirements or the minimum share price requirement, NYSE may take steps to delist our securities. If the NYSE delists our common stock from trading on its exchange for failure to meet the listing standards, we and our stockholders could face significant material adverse consequences including:

- a limited availability of market quotations for our securities;
- a determination that our common stock is a "penny stock" which will require brokers trading in our common stock to adhere to more stringent rules, possibly resulting in a reduced level of trading activity in the secondary trading market for our common stock;
- a limited amount of analyst coverage; and
- a decreased ability to issue additional securities or obtain additional financing in the future.

Additionally, if our securities are not listed on, or become delisted from, the NYSE for any reason, and are quoted on the OTC Bulletin Board, an inter-dealer automated quotation system for equity securities that is not a national securities exchange, the liquidity and price of our securities may be more limited than if we were quoted or listed on NYSE or another national securities exchange. You may be unable to sell your securities unless a market can be established or sustained.

Because we have no current plans to pay cash dividends on shares of common stock for the foreseeable future, you may not receive any return on investment unless you sell your shares of common stock for a price greater than that which you paid for it.

We currently intend to retain future earnings, if any, to finance the further development and expansion of its business and does not intend to pay cash dividends in the foreseeable future. Any decision to declare and pay dividends as a public company in the future will be made at the discretion of our Board and will depend on, among other things, our results of operations, financial condition, capital requirements, restrictions contained in future agreements and financing instruments, business prospects and such other factors as our Board may deem relevant. In addition, our ability to pay dividends may be limited by covenants of any existing and future outstanding indebtedness we or our subsidiaries incur. As a result, you may not receive any return on an investment in our common stock unless you sell your common stock for a price greater than that which you paid for it.

Our stock price could be extremely volatile, and, as a result, you may not be able to resell your shares at or above the price you paid for them.

In recent years the stock market in general has been highly volatile. As a result, the market price and trading volume of our securities is likely to be similarly volatile, and investors in our securities may experience a decrease, which could be substantial, in the value of their stock, including decreases unrelated to our results of operations or prospects, and could lose part or all of their investment. The price of our common stock could be subject to wide fluctuations in response to a number of factors, including those described elsewhere in this Annual Report on Form 10-K/A and others such as:

- variations in operating performance and the performance of our competitors or alternative energy companies in general;
- actual or anticipated fluctuations in our quarterly or annual operating results;
- publication of research reports by securities analysts about us or our competitors or its industry;
- the public's reaction to our press releases, our other public announcements and our filings with SEC;
- our failure or the failure of our competitors to meet analysts' projections or guidance that we or our competitors may give to the market;
- additions and departures of key personnel;
- strategic decisions by us or our competitors, such as acquisitions, divestitures, spin-offs, joint ventures, strategic investments or changes in business strategy;
- the passage of legislation or other regulatory developments affecting us or our industry;
- speculation in the press or investment community;
- changes in accounting principles;
- terrorist acts, acts of war, periods of widespread civil unrest, geopolitical uncertainties, trade policies and sanctions;
- natural disasters, widespread pandemics, and other calamities; and
- changes in general market and economic conditions.

A significant portion of our total outstanding shares of common stock are restricted from immediate resale but may be sold into the market in the near future. This could cause the market price of common stock to drop significantly, even if our business is doing well.

Shares of our common stock that are currently restricted from immediate resale may be sold into the market in the near future. These sales, or the perception in the market that the holders of a large number of shares intend to sell shares, could reduce the market price of common stock. We are unable to predict the effect that sales may have on the prevailing market price of our common stock and the public warrants originally issued in Athena's initial public offering (the "Public Warrants").

To the extent our Public Warrants or the private placement warrants issued to Athena Technology Sponsor LLC in a private placement prior to Athena's initial public offering (the "Private Warrants" and, together with the Public Warrants, the "Warrants") are exercised, additional shares of common stock will be issued, which will result in dilution to the holders of common stock and increase the number of shares eligible for resale in the public market. Sales, or the potential sales, of substantial numbers of shares in the public market, subject to certain restrictions on transfer until the termination of applicable lock-up periods, could increase the volatility of the market price of common stock or adversely affect the market price of common stock.

There is no guarantee that the Warrants will ever be in the money, and they may expire worthless and the terms of Warrants may be amended.

The exercise price for the Warrants is \$11.50 per share of common stock. There is no guarantee that the Warrants will ever be in the money prior to their expiration, and as such, the Warrants may expire worthless.

Our Warrants are issued in registered form under a warrant agreement between us and Continental Stock Transfer & Trust Company, as warrant agent (the "Warrant Agreement"). The Warrant Agreement provides that the terms of the 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 a majority of the then outstanding Public Warrants to make any other change. Accordingly, we may amend the terms of the Warrants in a manner adverse to a holder if holders of at least a majority of the then outstanding Warrants approve of such amendment. Although our ability to amend the terms of the Warrants with the consent of at least a majority of the then outstanding Warrants is unlimited, examples of such amendments could be amendments to, among other things, increase the exercise price of the Warrants, shorten the exercise period or decrease the number of shares and their respective affiliates and associates have of common stock purchasable upon exercise of a Warrant.

We may redeem the unexpired Warrants prior to their exercise at a time that is disadvantageous to warrant holders, thereby making such Warrants worthless.

We have the ability to redeem outstanding Public Warrants, commencing 90 days after March 18, 2022, the date the Public Warrants become exercisable and prior to their expiration, at a price of \$0.01 per warrant, provided that the last reported sales price of the common stock equals or exceeds \$18.00 per share for any 20 trading days within a 30 trading-day period ending on the third trading day prior to the date we send the notice of redemption to the warrant holders. If and when the Public Warrants become redeemable by us, 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.

In addition, we have the ability to redeem all (but not less than all) of the outstanding Warrants, including Private Warrants, at a price of \$0.10 per Warrant if the following conditions are satisfied: (i) the last reported sale prices of our common stock equals or exceeds \$10.00 (as may be adjusted for stock splits, stock dividends, reorganizations, recapitalizations or the like) on the trading day prior to the date of the notice; (ii) the Private Warrants are also concurrently exchanged at the same price as the outstanding Public Warrants; and (iii) there is an effective registration statement covering the issuance of the shares of our common stock issuable upon exercise of the Warrants and a current prospectus relating thereto available throughout the 30-day period after written notice of redemption is given. In either case, redemption of the outstanding Warrants could force you (i) to exercise your Warrants and pay the exercise price therefor at a time when it may be disadvantageous for you to do so, (ii) to sell your Warrants at the then-current market price when you might otherwise wish to hold your Warrants or (iii) to accept the nominal redemption price which, at the time the outstanding Warrants are called for redemption, is likely to be substantially less than the market value of your Warrants. The value received upon exercise of the Warrants (i) may be less than the value the holders would have received if they had exercised their Warrants at a later time where the underlying share price is higher and (ii) may not compensate the holders for the value of the Warrants, including because the number of shares of common stock received is capped at 0.361 shares of our common stock per Warrant (subject to adjustment) irrespective of the remaining life of the Warrants.

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Warrants will become exercisable for our common stock, which would increase the number of shares eligible for future resale in the public market and result in dilution to our stockholders.

Outstanding Warrants to purchase an aggregate of 8,566,666 shares of our common stock became exercisable on March 18, 2022 in accordance with the terms of the Warrant Agreement governing those securities. The exercise price of these Warrants will be \$11.50 per share, or approximately \$98.5 million in the aggregate for all shares underlying these Warrants, assuming none of the Warrants are exercised through “cashless” exercise. To the extent such Warrants are exercised, additional shares of our common stock will be issued, which will result in dilution to holders of our common stock and increase the number of shares eligible for resale in the public market. Sales of substantial numbers of such shares in the public market or the fact that such Warrants may be exercised could adversely affect the market price of our common stock. However, there is no guarantee that the Public Warrants will ever be in the money prior to their expiration, and as such, the Warrants may expire worthless.

We may be subject to securities litigation, which is expensive and could divert management attention.

The market price of our common stock may be volatile and, in the past, companies that have experienced volatility in the market price of their stock have been subject to securities class action litigation. We may be the target of this type of litigation in the future. Securities litigation against us could result in substantial costs and divert our management’s attention and resources from other business concerns, and could also require us to make substantial payments to satisfy judgments or to settle litigation either of which could seriously harm our business.

If securities or industry analysts do not publish or cease publishing research or reports about us, our business, or market, or if they change their recommendations regarding our securities adversely, the price and trading volume of our securities could decline.

The trading market for our securities will be influenced by the research and reports that industry or securities analysts may publish about us, our business, our market, or our competitors. Securities and industry analysts do not currently, and may never, publish research on us. If no securities or industry analysts commence coverage of us, our stock price and trading volume would likely be negatively impacted. If any of the analysts who may cover us, change their recommendation regarding our stock adversely, or provide more favorable relative recommendations about our competitors, the price of our securities would likely decline. If any analyst who may cover us were to cease coverage of us or fail to regularly publish reports on us, we could lose visibility in the financial markets, which could cause our stock price or trading volume to decline.

General Risk Factors

The requirements of being a public company may strain our resources and divert management’s attention.

As a public company, we are subject to the reporting requirements of the Exchange Act, the Sarbanes-Oxley Act of 2002 (“SOX”), the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2009, NYSE Listing Rules and other applicable securities rules and regulations. Compliance with these rules and regulations increase our legal and financial compliance costs, makes some activities more difficult, time-consuming or costly and increases demand on our systems and resources, particularly after we are no longer an “emerging growth company.” The SOX requires, among other things, that we maintain effective disclosure controls and procedures and internal control over financial reporting. In order to maintain and, if required, improve our disclosure controls and procedures and internal control over financial reporting to meet this standard, significant resources and management oversight may be required. Our management and other personnel will need to devote a substantial amount of time to these compliance initiatives. Moreover, these rules and regulations will significantly increase our legal and financial compliance costs and will make some activities more time-consuming and costly. Among other things, we are required to:

- maintain and evaluate a system of internal controls over financial reporting in compliance with the requirements of Section 404 of the SOX and the related rules and regulations of the SEC and the Public Company Accounting Oversight Board;
- maintain policies relating to disclosure controls and procedures;
- prepare and distribute periodic reports in compliance with our obligations under federal securities laws;
- institute a more comprehensive compliance function, including with respect to corporate governance; and
- involve, to a greater degree, our outside legal counsel and accountants in the above activities.

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The costs of preparing and filing annual and quarterly reports, proxy statements and other information with the SEC and furnishing audited reports to stockholders is expensive and much greater than that of a privately-held company, and compliance with these rules and regulations will require us to hire additional financial reporting,

internal controls and other finance personnel, and will involve a material increase in regulatory, legal and accounting expenses and the attention of our Board and management. As a result, management's attention may be diverted from other business concerns, which could adversely affect our business and operating results. We may need to hire more employees in the future or engage outside consultants to comply with these requirements, which will increase our costs and expenses.

In addition, changing laws, regulations and standards relating to corporate governance and public disclosure are creating uncertainty for public companies, increasing legal and financial compliance costs and making some activities more time consuming. These laws, regulations and standards are subject to varying interpretations, in many cases due to their lack of specificity, and, as a result, their application in practice may evolve over time as new guidance is provided by regulatory and governing bodies. This could result in continuing uncertainty regarding compliance matters and higher costs necessitated by ongoing revisions to disclosure and governance practices. We intend to invest resources to comply with evolving laws, regulations and standards, and this investment may result in increased general and administrative expenses and a diversion of management's time and attention from revenue-generating activities to compliance activities. If its efforts to comply with new laws, regulations and standards differ from the activities intended by regulatory or governing bodies due to ambiguities related to their application and practice, regulatory authorities may initiate legal proceedings against us, and our business may be adversely affected. In addition, the costs to maintain our director and officer liability insurance may continue to rise. In the future, we may be required to accept reduced coverage or incur substantially higher costs to obtain this coverage. These factors could also make it more difficult for us to attract and retain qualified executives and members of our Board.

Our internal control over financial reporting may not become effective and our independent registered public accounting firm may not be able to certify as to their effectiveness, which could have a significant and adverse effect on our business and reputation.

As a public company, we are required to comply with the SEC's rules implementing Sections 302 and 404 of SOX, which require management to certify financial and other information in our quarterly and annual reports and provide an annual management report on the effectiveness of internal control over financial reporting. Although the Company has made significant progress in remediating the aforementioned deficiencies as outlined above, the control deficiencies continued to exist as of December 31, 2021 due to identification of adjustments during the year ended December 31, 2021. Additionally, management did not perform sufficient control testing to conclude that the material weaknesses were remediated. As a result, this Annual Report on Form 10-K/A does not include a report of management's assessment regarding internal control over financial reporting pursuant to guidance furnished by the staff of the SEC's Division of Corporation Finance that, with respect to a reverse acquisition between an issuer and a private operating company where the private operating company is the accounting survivor, the issuer may exclude management's assessment of internal control over financial reporting in the Form 10-K covering the fiscal year in which the transaction was consummated. Due to the timing of the consummation of the Merger and Business Combination, management did not have adequate time to conduct a full assessment of our internal control over financial reporting and, in reliance on the staff's guidance, has excluded its assessment in this Annual Report on Form 10-K/A.

We will be required to provide management's assessment on internal controls commencing with the annual report for fiscal year ended December 31, 2022. In connection with these assessments and to address deficiencies such as the material weaknesses referenced above, we have and may need to undertake further actions, such as implementing additional internal controls and procedures and hiring additional accounting or internal audit staff, to ensure the proper development and operation of an effective internal control over financial reporting environment. The standards required for a public company under Section 404 of SOX are significantly more stringent than those that were required of us as a privately-held company and management may not be able to effectively and timely implement controls and procedures that adequately respond to the increased regulatory compliance and reporting requirements that will be applicable. Further, as an emerging growth company, our independent registered public accounting firm is not required to formally attest to the effectiveness of our internal controls over financial reporting pursuant to Section 404 until the date we are no longer an emerging growth company. At such time, our independent registered public accounting firm may issue a report that is adverse in the event that it is not satisfied with the level at which our internal control over financial reporting is documented, designed or operating. Any failure to maintain effective disclosure controls and internal control over financial reporting could adversely affect our business and operating results and could cause a decline in the price of our shares.

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Our stockholders may not be able to enforce judgments entered by United States courts against certain of our officers and directors.

We are incorporated in the State of Delaware. However, some of our directors and executive officers may reside outside of the U.S. As a result, our stockholders may not be able to effect service of process upon those persons within the U.S. or enforce against those persons judgments obtained in U.S. courts.

Anti-takeover provisions contained in our second amended and restated certificate of incorporation as well as provisions of Delaware law, could impair a takeover attempt.

The second amended and restated certificate of incorporation ("Certificate of Incorporation") contains provisions that may discourage unsolicited takeover proposals that stockholders may consider to be in their best interests. We are also subject to anti-takeover provisions under Delaware law, which could delay or prevent a change of control. Together these provisions may make more difficult the removal of management and may discourage transactions that otherwise could involve payment of a premium over prevailing market prices for our securities. These provisions include:

- no cumulative voting in the election of directors, which limits the ability of minority stockholders to elect director candidates;
- a classified Board with three-year staggered terms, which could delay the ability of stockholders to change the membership of a majority of our Board;
- the right of our Board to elect a director to fill a vacancy created by the expansion of our Board or the resignation, death or removal of a director in certain circumstances, which prevents stockholders from being able to fill vacancies on our Board;
- a prohibition on stockholder action by written consent, which forces stockholder action to be taken at an annual or special meeting of our stockholders; and
- the requirement that a meeting of stockholders may only be called by members of our Board or the stockholders holding a majority of our shares, which may delay the ability of our stockholders to force consideration of a proposal or to take action, including the removal of directors.

These provisions, alone or together, could delay hostile takeovers and changes in control or changes in our Board or our management.

As a Delaware corporation, we are also subject to provisions of Delaware law, including Section 203 of the Delaware General Corporation Law ("DGCL"), which prevents some stockholders holding more than 15% of our outstanding common stock from engaging in certain business combinations without approval of the holders of substantially all of our common stock. Any provision of our Certificate of Incorporation or bylaws or Delaware law that has the effect of delaying or deterring a change in control could limit the opportunity for our stockholders to receive a premium for their shares of our common stock and could also affect the price that some investors are willing to pay for our common stock.

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The JOBS Act permits “emerging growth companies” like us to take advantage of certain exemptions from various reporting requirements applicable to other public companies that are not emerging growth companies.

We currently qualify as an emerging growth company as defined in Section 2(a)(19) of the Securities Act, as modified by the JOBS Act. As such, we take advantage of certain exemptions from various reporting requirements applicable to other public companies that are not emerging growth companies for as long as we continue to be an emerging growth company, including: (i) the exemption from the auditor attestation requirements with respect to internal control over financial reporting under Section 404 of SOX; (ii) the exemptions from say-on-pay, say-on-frequency and say-on-golden parachute voting requirements; and (iii) reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements. As a result, our stockholders may not have access to certain information they deem important. We will remain an emerging growth company until the earliest of (i) the last day of the fiscal year: (a) following March 19, 2026, the fifth anniversary of our IPO; (b) in which we have total annual gross revenue of at least \$1.07 billion; or (c) in which we are deemed to be a large accelerated filer, which means the market value of our common stock that is held by non-affiliates exceeds \$700 million as of the prior June 30th, and (ii) the date on which we have issued more than \$1.0 billion in non-convertible debt during the prior three-year period.

In addition, Section 107 of the JOBS Act also provides that an emerging growth company can take advantage of the exemption from complying with new or revised accounting standards provided in Section 7(a)(2)(B) of the Securities Act as long as we are an emerging growth company. An emerging growth company can therefore delay the adoption of certain accounting standards until those standards would otherwise apply to private companies. The JOBS Act provides that a company can elect to opt out of the extended transition period and comply with the requirements that apply to non-emerging growth companies, but any such election to opt out is irrevocable. We have elected to avail ourselves of such extended transition period, which means that when a standard is issued or revised and it has different application dates for public or private companies, we, as an emerging growth company, can adopt the new or revised standard at the time private companies adopt the new or revised standard. This may make comparison of our financial statements with another public company that is neither an emerging growth company nor an emerging growth company that has opted out of using the extended transition period difficult or impossible because of the potential differences in accounting standards used.

We cannot predict if investors will find our common stock less attractive because we rely on these exemptions. If some investors find our common stock less attractive as a result, there may be a less active trading market for our common stock and our stock price may be more volatile.

Our Certificate of Incorporation provides, subject to limited exceptions, that the Court of Chancery of the State of Delaware and the federal district courts of the United States of America will be the sole and exclusive forums for substantially all disputes between us and our stockholders, which could limit our stockholders’ ability to obtain a favorable judicial forum for disputes with us or our directors, officers, stockholders or employees.

Our Certificate of Incorporation provides that, unless we consent in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware shall be the sole and exclusive forum for 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.

Our Certificate of Incorporation also provides that the exclusive forum provision will be applicable to the fullest extent permitted by applicable law. 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. As a result, the exclusive forum provision will not apply to suits brought to enforce any duty or liability created by the Exchange Act or any other claim for which the federal courts have exclusive jurisdiction. Furthermore, Section 22 of the Securities Act establishes concurrent jurisdiction for federal and state courts over Securities Act claims. Accordingly, both state and federal courts have jurisdiction to hear such claims. To prevent having to litigate claims in multiple jurisdictions and the threat of inconsistent or contrary rulings by different courts, among other considerations, our Certificate of Incorporation also provides that, unless we consent in writing to the selection of an alternative forum, the federal district courts of the United States will be the sole and exclusive forum for resolving any complaint asserting a cause of action arising under the Securities Act.

While the Delaware courts have determined that such choice of forum provisions are facially valid and several state trial courts have enforced such provisions and required that suits asserting Securities Act claims be filed in federal court, there is no guarantee that courts of appeal will affirm the enforceability of such provisions and a stockholder may nevertheless seek to bring a claim in a venue other than those designated in the exclusive forum provisions. In such instance, we would expect to vigorously assert the validity and enforceability of the exclusive forum provisions of our Certificate of Incorporation. This may require significant additional costs associated with resolving such action in other jurisdictions and there can be no assurance that the provisions will be enforced by a court in those other jurisdictions. If a court were to find either exclusive forum provision in our Certificate of Incorporation to be inapplicable or unenforceable in an action, we may incur further significant additional costs associated with litigating Securities Act claims in state court, or both state and federal court, which could seriously harm our business, financial condition, results of operations, and prospects.

Any person or entity purchasing or otherwise acquiring or holding or owning (or continuing to hold or own) any interest in any of our securities shall be deemed to have notice of and consented to the forum provisions in our Certificate of Incorporation. Although we believe these exclusive forum provisions benefit us by providing increased consistency in the application of Delaware law and federal securities laws in the types of lawsuits to which each applies, the exclusive forum provisions may limit a stockholder’s ability to bring a claim in a judicial forum that it finds favorable for disputes with us or our current or former directors, officers, stockholders or other employees, which may discourage such lawsuits with respect to such claims. Our stockholders will not be deemed to have waived our compliance with the federal securities laws and the rules and regulations thereunder as a result of our exclusive forum provisions.

The Warrant Agreement designates the courts of the State of New York or the United States District Court for the Southern District of New York as the sole and exclusive forum for certain types of actions and proceedings that may be initiated by holders of the Warrants, which could limit the ability of warrant holders to obtain a favorable judicial forum for disputes with our company.

Our Warrants are issued in registered form under a Warrant Agreement between us and Continental Stock Transfer & Trust Company, as warrant agent. The Warrant Agreement provides that, subject to applicable law, (i) any action, proceeding or claim against us arising out of or relating in any way to the Warrant Agreement, including under the Securities Act, will be brought and enforced in the courts of the State of New York or the United States District Court for the Southern District of New York, and (ii) that we irrevocably submit to such jurisdiction, which jurisdiction shall be the exclusive forum for any such action, proceeding or claim. We will waive any objection to such exclusive jurisdiction and that such courts represent an inconvenient forum.

Notwithstanding the foregoing, these provisions of the Warrant Agreement 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 district courts of the United States of America are the sole and exclusive forum. Any person or entity purchasing or otherwise acquiring any interest in any of our Warrants shall be deemed to have notice of and to have consented to the forum provisions in our Warrant Agreement. If any action, the subject matter of which is within the scope the forum provisions of the Warrant Agreement, is filed in a court other than a court of the State of New York or the United States District Court for the Southern District of New York (a “foreign action”) in the name of any holder of our Warrants, such holder shall be deemed to have consented to: (x) the

personal jurisdiction of the state and federal courts located in the State of New York in connection with any action brought in any such court to enforce the forum provisions (an “enforcement action”), and (y) having service of process made upon such warrant holder in any such enforcement action by service upon such warrant holder’s counsel in the foreign action as agent for such warrant holder.

This choice-of-forum provision may limit a warrant holder’s ability to bring a claim in a judicial forum that it finds favorable for disputes with us, which may discourage such lawsuits. Alternatively, if a court were to find this provision of our Warrant Agreement inapplicable or unenforceable with respect to one or more of the specified types of actions or proceedings, we may incur additional costs associated with resolving such matters in other jurisdictions, which could materially and adversely affect our business, financial condition and results of operations and result in a diversion of the time and resources of our management and Board.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

Our headquarters are located in Pasadena, California, where we design, engineer, and develop our HelioHeat, HelioPower, and HelioFuel solutions. We have a new manufacturing facility in Long Beach, California to produce heliostats for our modular, concentrated solar energy projects. The state-of-the-art facility will include assembly lines, an expansive test facility, and rapid development center for the production of heliostats and other components in Heliogen’s concentrated solar energy system. Our Pasadena and Long Beach facilities are leased.

We built a test facility in Lancaster, California, which we completed in November of 2019 to successfully demonstrate our fundamental technology innovations and continue to use to test and evaluate new developments and product generations. We also have a satellite office located at the National Solar Thermal Test Facility inside Sandia National Laboratories, which enables us to efficiently utilize their world-class solar technology testing capabilities as we validate our products.

Item 3. Legal Proceedings

Information relating to various commitments and contingencies is described in Note 14 to our consolidated financial statements in Part II, Item 8 of this Annual Report on Form 10-K and the information discussed therein is incorporated by reference into this Part I, Item 3.

Item 4. Mine Safety Disclosures

Not applicable.

Part II

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

Market Information

Our common stock and warrants are traded on the NYSE under the symbol “HLGN” and “HLGN.W,” respectively.

Holders of Record

As of March 25, 2022, we had 549 stockholders of record of our common stock and 2 holders of record of our warrants.

The actual number of stockholders of our common stock and warrants is greater than this number of record holders and includes holders who are beneficial owners but whose shares of common stock or warrants are held in “street name” by banks, brokers and other nominees.

Dividend Policy

We currently do not pay dividends on our common stock, and we do not anticipate paying cash dividends in the foreseeable future. Payment of cash dividends, if any, in the future will be at the discretion of our Board and will depend on then-existing conditions, including our financial condition, operating results, contractual restrictions, capital requirements, business prospects and other factors our Board may deem relevant.

Securities Authorized for Issuance Under Equity Compensation Plans

The equity compensation plan information required by Item 201(d) of Regulation S-K will be set forth in the definitive proxy statement for the Company’s annual meeting of stockholders, which we intend to file with the SEC within 120 days of the end of our 2021 fiscal year, and is incorporated by reference in this Annual Report on Form 10-K. Additionally, refer to Note 10 to our consolidated financial statements included in Part II, Item 8 for additional information on our equity compensation plans.

Recent Sales of Unregistered Equity Securities

On December 30, 2021, certain investors purchased from the Company an aggregate of 16,500,000 shares of common stock (the “PIPE Shares”), pursuant to separate subscription agreements, for a purchase price of \$10.00 per share and an aggregate purchase price of \$165.0 million, pursuant to Subscription Agreements entered into effective as of July 6, 2021. The sale of the PIPE Shares was made in reliance on the exemption from registration in Section 4(a)(2) under the Securities Act.

Issuer Purchases of Equity Securities

None.

Item 6. [Reserved]

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

The following management's discussion and analysis ("MD&A") provides information that management believes is relevant to an assessment and understanding of our consolidated results of operations and financial condition, and includes forward-looking statements that involve risks, uncertainties and assumptions. The MD&A should be read in conjunction with Part I of this Annual Report on Form 10-K/A, the consolidated financial statements and related notes included in Part II Item 8 in this Annual Report on Form 10-K/A, and the section titled "Cautionary Note Regarding Forward-Looking Statements" included in the fore-part in this Annual Report on Form 10-K/A.

Restatement of Previously Issued Consolidated Financial Statements

The following discussion and analysis should be read in conjunction with the audited consolidated financial statements and notes thereto as of December 31, 2021 and 2020, and for the years then ended, included elsewhere in this Annual Report on Form 10-K/A. This Management's Discussion and Analysis of Financial Condition and Results of Operations has been amended and restated to give effect to the restatement of the Company's consolidated financial statements, as more fully described in the Explanatory Note and Note 3, "Restatement of Previously Issued Consolidated Financial Statements," of the notes to the consolidated financial statements.

Overview

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

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

The three use categories 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 — Building on the Power system described above, hydrogen fuel production will be enabled by further adding an electrolyzer system to the baseline system.

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

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

- Contracting with owner-operators to build turnkey facilities that deploy Heliogen's technology (Heliogen will contract with engineering, procurement and construction ("EPC") partners for constructing the facility);
- Selling heliostats (and associated software control systems) to owner-operators and/or EPC contractors;
- Providing asset maintenance support services during operation, for completed facilities that use Heliogen's technology; and
- Providing project development support services to help customers advance readiness to break ground in advance of final investment decisions.

In the future, we will also be prepared to offer Heliogen's IP through a licensing model to third parties interested in manufacturing and installing the hardware.

Recent Developments

Customer Contracts

On March 28, 2022, Heliogen entered into a series of commercial agreements (collectively, the "Agreements") with Woodside Energy (USA) Inc. ("Woodside"), a wholly-owned subsidiary of leading Australian energy producer Woodside Petroleum Ltd. for the commercial-scale demonstration and deployment of Heliogen's AI-enabled concentrated solar energy technology in California and the marketing of Heliogen's technology in Australia. Pursuant to the terms of the commercial-scale demonstration agreement (the "Project Agreement"), Heliogen has agreed to complete the engineering, procurement, and construction of a new 5 MWe HelioPower facility to be built in Mojave, California for testing, research and development. The two companies also agreed to include the scope and associated funding from the "DOE Award. As a result, in addition to commercial-scale demonstration of Heliogen's 5 MWe power module, the project will also include the deployment and testing of an innovative approach to converting the thermal energy produced by Heliogen's facility into power with a smaller footprint than traditional steam turbines.

In addition to the Project Agreement, Heliogen and Woodside have also signed a collaboration agreement to jointly market Heliogen's technology in Australia (the "Australia Collaboration Agreement") with the objective to deploy further commercial-scale modules of HelioHeat, HelioPower, and HelioFuel offerings. Under this arrangement, the parties expect to define product offerings that use Heliogen's modular technology for potential customers (including Woodside) in Australia and are

establishing a roadmap to identify and engage with those customers. For additional information on the Agreements, see “Part II, Item 9B. Other Information” contained in this Annual Report on Form 10-K.

Athena Business Combination

On December 30, 2021 (“the Closing Date”), we consummated the closing of the transactions contemplated by the Business Combination Agreement, dated July 6, 2021, by and among Athena, Merger Sub, and Legacy Heliogen (the “Business Combination Agreement”). Pursuant to the terms of the Business Combination Agreement, a business combination of Legacy Heliogen and Athena was effected by the merger of Merger Sub with and into Legacy Heliogen, with Legacy Heliogen surviving the Merger as a wholly owned subsidiary of Athena (the “Merger,” and, together with the other transactions contemplated by the Business Combination Agreement, the “Business Combination”). In connection with the consummation of the Merger on the Closing Date, Athena changed its name from Athena Technology Acquisition Corp. to Heliogen, Inc. (the “Company”) and Legacy Heliogen changed its name from Heliogen, Inc. to Heliogen Holdings, Inc. The Business Combination resulted in net proceeds of \$159.4 million in cash (including proceeds from the Athena trust account, less redemptions, and a PIPE investment of \$165.0 million, offset by transaction costs paid at closing).

Brenda Solar Energy Zone

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

ICARUS

In December 2021, the Company successfully completed the first technical demonstration of an autonomous field maintenance system, Heliogen’s Installation & Cleaning Autonomous Robot & Utility Solution, or ICARUS. Once enhanced and deployed at scale, this system is expected to reduce the time and cost associated with construction and ongoing maintenance.

Bloom Energy

In November 2021, we successfully generated green hydrogen in a test that integrated Heliogen’s solar energy technology and Bloom Energy Corporation’s solid oxide, high-temperature electrolyzer. The trial demonstrated that the companies’ combined technology can produce hydrogen 45 percent more efficiently than traditional low-temperature PEM and alkaline electrolyzers. Electricity accounts for nearly 80 percent of the cost of producing hydrogen from electrolysis. Substituting our concentrated solar energy system for some of the electricity used to run the electrolyzer during the hydrogen production process significantly reduces production cost since heat is a much lower cost source of energy than electricity. The ability to use heat instead of electricity improves the economics of green hydrogen production.

HelioHeat Acquisition

In September 2021, Heliogen acquired HelioHeat GmbH (“HelioHeat”), a private limited liability company in Germany pursuant to a share purchase and transfer agreement (the “HelioHeat Acquisition”). HelioHeat is engaged in the development, planning and construction of renewable energy systems and components, including a novel solar receiver. Heliogen acquired HelioHeat in order to own and use HelioHeat’s particle receiver technology in future commercial-scale facilities for our customers and leverage the expertise of its assembled workforce.

Key Factors and Trends Affecting our Business

Growth Opportunity

Heliogen’s growth is tied to the global phenomenon commonly described as “the energy transition” – that is, the shift in energy supply from burning fossil fuels to harnessing low-carbon and renewable sources of energy. Data linking the role of carbon emissions in accelerating climate change has led to shareholders and activists applying pressure to companies and governments to take action. This trend has been on the rise since the signing of the Paris Agreement in 2015, led largely by Europe. As a result, the energy transition has become a major focus of both private and public sector leaders around the world. Companies and governments have begun setting ambitious goals to reduce GHG emissions and to use renewable resources to sustainably power their operations.

Heliogen’s growth strategy is to harness the significant demand by delivering technology that enables scalable, distributed, solar-thermal energy plants that can create heat, steam, power, and “clean” hydrogen – i.e., without the carbon emissions produced by fossil fuel energy sources. Our solutions target the end markets with a need for heat, electric power, and hydrogen. Such markets include the oil & gas, power, cement, steel, and mining industries.

Heliogen’s technology platform allows modular plants for heat, steam, power, and/or hydrogen to be built at customer locations. The Company’s strategy to achieve scale is through modularity and repeatability, with minimal custom re-engineering compared to prior iterations of this technology. The majority of the plant will be built in a factory that can be scaled to produce many plants per year. Heliogen will be able to further scale by replicating that factory in multiple regions as we expand globally.

Leveraging the modularity of the system and repeatability of its implementation, in the near to medium term, Heliogen will partner with contractors and other supply chain participants to execute projects. In the long term, the Company expects to license our core, patent-protected technology to owner-operators and EPC companies who can each deploy many plants, to achieve a scale and growth trajectory that can take advantage of the size of the market opportunity. Licensing could enable Heliogen to improve the pace of our deployments, as well as increase our profit margins, beyond what could be achieved solely through our direct implementation.

In order to support Heliogen’s growth as described above, we will continue its dedication to research and development and to iterating on its novel combination and integration of hardware and software. We are working to harness our specialty of using more software, more automation, more robotics, and more algorithms to reduce the quantity of materials, the amount of human labor, and the duration of time required to deliver our projects at scale.

Geographically we are focused initially on the U.S., but plan to position the Company to respond to global demand in locations with strong solar resource such as Mexico, South America, Australia, Africa and parts of Europe in the future. Global energy demand is expected to increase by 35% in the next two decades, due to an increase in population and the economic growth of developing countries. Demand for carbon-free replacements for current energy sources will further increase the demand for Heliogen’s products.

Market Opportunity

Capital expenditure investments for solar and on- and off-shore wind capacity between 2020 and 2030 are projected to be approximately \$8.5 trillion globally in order to achieve the carbon emissions reductions that would support the 1.5 degree global warming target established by the Paris Agreement. The global renewable energy market had total revenues of \$692.8 billion in 2020, representing a compound annual growth rate (“CAGR”) of 8.9% between 2016 and 2020. The global renewable energy market is expected to continue its upward growth over the next years, reaching \$1.1 trillion by 2027. At the same time, the global total addressable market for energy storage is predicted to reach approximately \$56.0 billion by 2027 in comparison to \$8.0 billion in 2020, representing a CAGR of approximately 33%. Growing at a CAGR of approximately 43% between 2020 and 2027, the cumulative requirement for global storage capacity is expected to become a 534 gigawatt-hour (“GWh”) opportunity in 2027.

We plan to also provide solutions for hydrogen production and industrial heat, so we believe our total addressable market is even larger. Our potential sales pipeline is diverse, ranging from utilities and independent power producers, oil and gas companies, mining and metals companies, and manufacturers of steel and cement. The worldwide energy industry generates annual revenues of approximately \$8.6 trillion. In addition, the worldwide clean energy market is expected to reach \$24 trillion by the end of the decade.

Government Targets and Corporate Initiatives

Governments, corporations, and investors are making concerted efforts and setting aggressive targets to reduce GHG emissions and phase out fossil fuel use. Such initiatives include setting timelines for zero-emission targets, establishing caps on CO2 emissions, and instituting certain other environmental sustainability initiatives. For example, in the U.S., the Biden Administration has declared the following key environmental targets: (i) a carbon pollution-free power sector by 2035, (ii) a net-zero (i.e., carbon reduction is equal to or greater than carbon emissions) economy by 2050 and (iii) to achieve in 2030 a 50-52% reduction from 2005 levels in economy-wide net GHG pollution. In the private sector, companies have also committed to environmental sustainability initiatives. Leading financial and corporate institutions have requested that all boards of directors prepare and disclose a plan to be compatible with a net-zero economy and to commit to launching investment products aligned to a net-zero pathway. Individually and collectively, these initiatives support the increased demand for renewable fuels, transportation, energy storage, renewable power, low-carbon process heat, and energy efficiency.

The key driver for renewable energy generation and storage will be increased reliance on intermittent renewable energy resources like solar PV and wind. As penetration of these renewable sources increases, the intermittency of these resources can put strain on the grid if the operator is unable to fully match supply with demand. This strain can lead to an inability to supply power when it is needed and increased costs to consumers.

Energy storage can help reduce this strain. However, beyond a threshold level of renewable penetration, current solutions to energy storage, such as batteries, are insufficient to ensure grid reliability. Research from the National Renewable Energy Laboratory, a national laboratory of the U.S. Department of Energy, suggests that this threshold may be around 30% renewable penetration based on its Eastern Renewable Generation Integration Study; which found that the Eastern Interconnection, one of the largest power systems in the world, can accommodate upwards of 30% of wind and solar photovoltaic power. California is already at this level and we expect other specific geographies both in the United States and abroad will be there soon. Bloomberg New Energy Finance projects that the United States as a whole will exceed this target by 2029. In order to maintain system stability and achieve mandated decarbonization goals, longer duration energy storage options must be deployed. We believe Heliogen’s technology will be among a small list of available technologies that will be able to respond to this energy storage need in order to maintain grid reliability.

To note, changes in elected officials may directly result in changes to U.S. government mandates and available programs as well as indirectly result in changes to support from the private sectors. Such changes may have an adverse impact on the growth of renewable energy.

Competitive Strengths

We believe we have a first-mover advantage over other industry competitors as we have been committed since our founding in 2013 to the development of solar energy solutions that enable decarbonization of our economy. This is evidenced by our rich portfolio of intellectual property. We have demonstrated capability to concentrate sunlight to produce heat at temperatures ranging from 150 to 1,000 degrees centigrade, made possible by our first-of-a-kind ability to achieve high mirror adjustment accuracy. We have patented the most valuable parts of our technology at each stage of development. Beyond the patents, our journey as a company and the deep bench of experience across our leadership team has provided and continues to provide invaluable learnings and technical know-how that we believe will be difficult to rival. We continue to develop and maintain our knowledge base, which we believe provides us with a substantial strategic head start and competitive advantage against competition in the concentrated solar energy and energy storage spaces. We also continue to target incremental and transformational improvements across all aspects of our technology in order to reduce costs and improve performance.

Competitive Forecast Economics

Historically, CSE companies have struggled to compete with PV solar due to high costs. However, while the cost of photovoltaic solar has decreased dramatically in the last decade, the issue of intermittency remains unresolved. In addition, PV does not offer an efficient solution for generating heat. As a result, PV solar may be uneconomical for many industrial processes that require heat and/or reliable delivery.

We believe our projected economics will be competitive with other prevalent sources of clean energy that include storage. For example, on a forward-looking basis, our future targets estimate a cost of less than 5 cents per MWh for power and less than \$2.00 per kilogram of hydrogen, which is competitive with alternative sources. This analysis assumes subsidized economics with 60% debt at an 8% interest rate and 40% equity at a 12% cost over a 30-year projection period. Additionally, these projections are based on expected cost reductions associated with manufacturing production efficiencies, module-enabled economies of scale, and mechanical improvements such as elimination of an expensive slew-drive gearbox that is enabled by the closed-loop tracking system.

Raw Materials

The most important raw materials required for our CSE systems are steel (sheet, tube, bar, extrusions), stainless steel (pipe), glass (float glass), copper (wiring), aluminum (die castings, extrusions), commodity electrical & electronics components, ceramics & ceramic fibers, thermal insulation materials, bauxite particles and/or silica sand and concrete. Our components are produced by suppliers both domestically and internationally where most raw materials are readily available and purchased by those independent contractors and suppliers in the country of manufacture. Many major equipment and systems components are procured on a single or sole-source basis, but where multiple sources exist, we work to qualify multiple suppliers to minimize supply chain risk. We also mitigate risk by maintaining safety stock for key parts and assemblies with lengthy procurement lead times. We use a variety of agreements with suppliers to protect our intellectual property and processes to monitor and mitigate risks of the supply base causing a business disruption. The risks monitored include supplier financial viability, the ability to increase or decrease production levels, business continuity, quality and delivery.

The ongoing COVID-19 pandemic has resulted in significant supply chain disruptions globally, and similar to other companies in our industry, we have observed significant commodity price inflation in recent months, in some cases by upwards of 30% to 100%. Russia's invasion of and military attacks on Ukraine, including indirect impacts as a result of sanctions and economic disruption, may further complicate existing supply chain constraints. Shortages, price increases and/or delays in shipments of our raw materials and purchased component parts, have occurred and may continue to occur in the future which may have a material adverse effect on our results of operations if we are unable to successfully mitigate the impact, such as steel, glass, concrete and adhesives, which are used as components of supplies or materials utilized in our operations.

COVID-19 Pandemic

In March 2020, the World Health Organization classified the COVID-19 outbreak as a pandemic. As the pandemic has continued to evolve, including the emergence of additional SARS-CoV-2 variants that have proven especially contagious or virulent, the ultimate extent of the impact on our businesses, operating results, cash flows, liquidity and financial condition will be driven primarily by the severity and duration of the pandemic, the pandemic's impact on the U.S. and global economies. During the year ended December 31, 2021, despite the continued COVID-19 pandemic, we continued to operate our business at full capacity, including all of our manufacturing and research and development operations, with the adoption of enhanced health and safety practices for our stakeholders.

Results of Operations

Key Components of Our Results of Operations

Revenue - we recognize revenue over time using the incurred costs method for our contracts with customers that include projects under development and engineering and design services.

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

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

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

Factors Impacting Comparability

Athena Business Combination - On December 30, 2021, we completed the closing of the Business Combination with Athena contemplated by the Business Combination Agreement, dated July 6, 2021, by and among Athena, Merger Sub, and Legacy Heliogen, following the approval at the Special Meeting held on December 28, 2021. While the legal acquirer in the Business Combination Agreement was Athena, for financial accounting and reporting purposes under accounting principles generally accepted in the United States of America ("U.S. GAAP"), Legacy Heliogen was the accounting acquirer and the Transaction were accounted for as a "reverse recapitalization."

A reverse recapitalization does not result in a new basis of accounting for the accounting acquirer, and the consolidated financial statements of the combined company represent the continuation of the historical consolidated financial statements of Legacy Heliogen in many respects. Under this method of accounting, Athena is treated as the "acquired" company for financial reporting purposes and the Business Combination is accounted for as a recapitalization of Legacy Heliogen (i.e., a capital transaction involving the issuance of stock by Legacy Heliogen for the net assets of Athena accompanied by a recapitalization).

As a result of the Business Combination, Legacy Heliogen is the successor SEC registrant, and Legacy Heliogen's historical consolidated financial statements for previous periods are presented in periodic reports filed with the SEC. The most significant changes in Legacy Heliogen's reported financial position and results relate to the following:

- Net cash proceeds received by Heliogen of \$159.4 million as a result of the Business Combination (reflecting proceeds from Athena's trust account, less redemptions, and a PIPE investment of \$165.0 million, offset by transaction costs paid at closing);
- The conversion of Legacy Heliogen's legacy preferred stock, SAFE Instruments, and warrants to shares of common stock as part of the Merger; and
- The assumption of Athena's public and private warrants, which are accounted for at fair value.

Additionally, since Legacy Heliogen became the successor to an SEC-registered and NYSE-listed company, we adopted and will continue to evaluate and implement procedures and processes to comply with public company regulatory requirements and customary practices. We have incurred and expect to incur additional annual expenses as a result of being a public company for, among other things, directors' and officers' liability insurance, director fees and professional services for accounting, audit, legal and other customary services required of a public company.

Comparison of the Years Ended December 31, 2021 and 2020

<i>In thousands, except percentages</i>	Years Ended December 31,		\$ Change
	2021	2020	
Revenue:			
Sales revenue	\$ 7,362	\$ 200	\$ 7,162
Grant revenue	1,442	—	1,442
Total revenues	8,804	200	8,604
Cost of revenue:			
Cost of sales	5,762	417	5,345
Cost of grant revenue	3,177	—	3,177

Provision for contract losses	508	—	508
Total cost of revenue	9,447	417	9,030
Gross loss	(643)	(217)	(426)
Operating expenses:			
Selling, general, and administrative	29,844	3,713	26,131
Research and development	13,478	3,583	9,895
Total operating expenses	43,322	7,296	36,026
Operating loss	(43,965)	(7,513)	(36,452)
Other income (expense):			
Interest income (expense)	634	(3)	637
SAFE instruments remeasurement	(86,907)	—	(86,907)
Warrant remeasurement	(6,651)	(7)	(6,644)
Other (expense) income	(517)	86	(603)
Loss before income taxes	(137,406)	(7,437)	(129,969)
Provision for income taxes	(2)	—	(2)
Net loss	(137,408)	(7,437)	(129,971)
Other comprehensive loss, net of taxes			
Losses on available-for-sale securities	(17)	—	(17)
Cumulative translation adjustment	13	—	13
Total comprehensive loss	<u>\$ (137,412)</u>	<u>\$ (7,437)</u>	<u>\$ (129,975)</u>

n/m - not meaningful

Revenue and Gross Loss

During the year ended December 31, 2021, we recognized revenue of \$8.8 million driven primarily by \$6.5 million in services revenue related primarily to engineering and design services, \$0.9 million in project revenue for amounts recognized related to the development and completion of our first commercial-scale facility, and \$1.4 million in grant revenue related to amounts reimbursable under the DOE Award for costs incurred in support of our first commercial-scale facility to be constructed and delivered to Woodside under the Project Agreement. Prior to 2021, we had not recorded significant amounts of revenue as our focus was primarily on research and development of our CSE technology. During 2021, we contracted with several customers expected to be involved in the development and completion of our first commercial-scale facilities which resulted in a large engineering and design contract that was completed entirely within 2021. As we transition to 2022, we are recognizing project revenue as we satisfy performance obligations associated with the construction and deployment of our CSE technology in a commercial-scale facility.

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During the year ended December 31, 2021, we recognized gross loss of \$0.6 million due primarily to recognition of contract losses of \$0.5 million related to two service contracts with customers. Our gross loss is net of \$1.6 million in gross profit earned on the engineering and design service contract completed in 2021.

We recognized a gross loss for the year ended December 31, 2020 due to cost overruns relating to a revenue contract for engineering and design service.

Selling, General, and Administrative Expense

SG&A increased approximately \$26.1 million, from \$3.7 million for the year ended December 31, 2020 to \$29.8 million for the year ended December 31, 2021. The increase was driven primarily by our growth to support commercial operations, resulting in higher headcount and related employee expenses of approximately \$16.5 million, professional and consulting services to support public company readiness efforts of \$5.8 million, and facilities and office related expenses of \$4.4 million due to expansion of our facilities in Pasadena, California and Long Beach, California.

Research and Development Expense

R&D expense increased \$9.9 million, from \$3.6 million for the year ended December 31, 2020 to \$13.5 million for the year ended December 31, 2021. The increase was due primarily to headcount growth and related consulting services associated with our continuing development efforts related to our commercial-scale offering.

SAFE Instruments Remeasurement

In the first half of 2021, we entered into Simple Agreements for Future Equity (“SAFE Instruments” or “SAFE”) financing transactions with third-party investors in connection with a private round of funding to provide investors an opportunity to convert into common or preferred stock, upon defined triggering events. Pursuant to the SAFE agreement provisions, the SAFE Instruments were converted to common stock immediately prior to the closing of the Business Combination. See Note 1 of our accompanying consolidated financial statements, for further discussion on the SAFE Instruments converted to common stock as related to the Merger. Due to the terms of the SAFE Instruments, the SAFE Instruments were measured at fair value at each reporting period and through the date of conversion resulting in the recognition of a \$86.9 million loss on the remeasurement during the year ended December 31, 2021. Refer to Notes 5 and Note 15 to our accompanying consolidated financial statements for the accounting for and significant inputs to the valuation of the SAFE Instruments, respectively, as of and for the year ended December 31, 2021.

Warrant Remeasurement

During the year ended December 31, 2020 and through the closing of the Business Combination, we had outstanding warrants to purchase our preferred stock that were subject to fair value accounting. Upon consummation of the Business Combination, those warrants were converted into common stock. As part of the Business Combination, we assumed the outstanding public and private warrants of Athena, which were accounted for at fair value. We incurred a \$6.7 million loss during the year ended December 31, 2021 related to the change in valuation on our warrant liabilities, compared to a loss of \$7 thousand during the year ended December 31, 2020. The loss in 2021 is comprised of a \$3.0 million loss related to Heliogen’s preferred stock warrants which converted immediately prior to the closing of the Business Combination and \$3.7 million in loss recognized in the period after December 30, 2021 for the Athena public and private warrants assumed by Heliogen as part of the Business Combination based on fair value at December 31, 2021. Refer to Notes 5 and 15 to our accompanying consolidated financial statements for the accounting for and for significant inputs to the valuation of warrants as of and for the year ended December 31, 2021.

Liquidity and Capital Resources

Heliogen’s principal source of liquidity has historically been proceeds from private investors through the issuance of SAFE Instruments, preferred stock, and common stock. As a result of the Business Combination with Athena, Heliogen received net cash proceeds of \$159.4 million. Additionally, Heliogen began recognizing

revenue in 2020, had increased revenues in 2021, and is in the process of negotiating further revenue contracts with customers as we progress toward the development and completion of our first commercial-scale CSE facilities. Our principal uses of cash are for selling, general and administrative expenses and R&D expenditures in support of Heliogen's development of its technology and operational growth efforts. To date, Heliogen has not had any material bank debt and has no material outstanding debt on the balance sheet as of December 31, 2021. Total liquidity for Heliogen, including cash and cash equivalents and available-for-sale investments, totaled \$222.4 million and \$18.3 million as of December 31, 2021 and December 31, 2020, respectively.

The Company's material cash requirements from known contractual and other obligations consist primarily of long-term operating leases related to our Pasadena, California and Long Beach, California office leases. Refer to Note 13 of our accompanying consolidated financial statements for a maturity analysis of our operating leases.

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

Summary of Cash Flows

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

<i>In thousands</i>	Years Ended December 31,	
	2021	2020
Net cash used in operating activities	\$ (31,055)	\$ (7,002)
Net cash used in investing activities	(38,646)	(295)
Net cash provided by financing activities	242,948	10,686

Net Cash from Operating Activities

Net cash used in operating activities was \$31.1 million for the year ended December 31, 2021 compared to \$7.0 million cash used for the year ended December 31, 2020, resulting in a \$24.1 million increase in use of operating cash, driven primarily by higher operating costs of \$24.7 million, net of changes in accruals, in 2021 compared to 2020 due to Heliogen's ramp-up of operations and increases in headcount, deposits paid to third parties for feasibility studies associated with ongoing project development activities of \$1.1 million, our Pasadena, California office lease of \$0.4 million, and \$1.5 million in restricted cash in connection with our Long Beach, California office lease. These increases were partly offset by cash receipts of \$5.1 million associated with our large engineering and design contract that was fully completed in 2021.

Net Cash from Investing Activities

For the year ended December 31, 2021, cash used in investing activities was \$38.6 million and consisted of cash invested in available-for-sale debt securities of \$49.3 million offset by maturities of \$16.2 million, cash consideration paid for the HeliHeat Acquisition, net of acquired cash, of \$1.7 million, and \$3.8 million for additions to property, plant, and equipment primarily comprising \$2.1 million in machinery, equipment and improvements for our new Long Beach manufacturing facility and \$1.4 million in office and computer equipment to support our headcount growth. Cash used in investing activities for the year ended December 31, 2020 was \$0.3 million and primarily represents leasehold improvements to our facilities.

Net Cash from Financing Activities

Cash provided by financing activities totaled \$242.9 million for the year ended December 31, 2021, driven primarily by \$159.4 million from the closing of the Business Combination, inclusive of the PIPE proceeds, net of transactions costs, \$83.4 million cash received from the issuance of the SAFE Instruments and \$0.5 million cash received from the exercise of stock options, partly offset by \$0.4 million for repayment of the Paycheck Protection Program ("PPP") loan received in 2020.

Cash provided by financing activities totaled \$10.7 million for the year ended December 31, 2020 and was due primarily to \$10.2 million cash received from the issuance of preferred stock and \$0.4 million cash received from the PPP loan.

Critical Accounting Estimates

The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the amounts reported in the consolidated financial statements and accompanying notes. Although these estimates are based on our knowledge of current events and actions we may undertake in the future, actual results could differ from those estimates and assumptions.

Revenue Recognition

We recognize revenue over time as work is performed using the incurred costs method, which we believe is the method that most accurately reflects our progress toward satisfaction of the performance obligation. Under this method, revenue arising from fixed-price contracts, which include cost reimbursable contracts with a cap, is recognized as work is performed based on the ratio of costs incurred to date to the total estimated costs at completion of the performance obligations.

Incurred costs include all direct material, labor, and subcontract costs, and those indirect costs related to contract performance, such as indirect labor, supplies, and tools. Cost-based input methods of revenue recognition require us to make estimates of net contract revenues and costs to complete the projects. In making such estimates, significant judgment is required to evaluate assumptions related to the amount of net contract revenues, including the impact of any performance incentives, liquidated damages, and other payments to customers. Significant judgment is also required to evaluate assumptions related to the costs to complete the projects, including materials, labor, contingencies, and other system costs. If the estimated total costs on any contract are greater than the net contract revenues, we recognize the entire estimated loss in the period the loss becomes known and can be reasonably estimated.

Share-Based Compensation

We estimate the fair value of our stock option awards using the Black-Scholes option pricing model, which requires the input of subjective assumptions, including the fair value of our common stock, expected term, expected volatility, risk-free interest rate and expected dividends, which are described in greater detail below.

Fair value of our common stock — The estimated fair value of our common stock required significant judgment by management, including the valuation methodology used, weighting of potential scenarios, and discount rate. Our common stock was measured at fair value using a probability-weighted method considering two potential outcomes: a merger with a special purpose acquisition company exit scenario and a stay private scenario. In addition, we applied a discount for lack of marketability, which was estimated using the Black-Scholes option pricing model.

Expected Term — The expected term of the options represents the average period the stock options are expected to remain outstanding.

Expected Volatility — Prior to the Business Combination, we had no trading history for our common stock. Thus, expected volatility is based on the historical volatilities of the common stock of comparable publicly traded companies.

Risk-Free Interest Rate — The risk-free interest rate is based on the yield of zero-coupon U.S. Treasury notes as of the grant date with maturities commensurate with the expected term of the awards.

Expected Dividends — The expected dividends assumption is based on the expectation of not paying dividends in the foreseeable future; therefore, we used an expected dividend yield of zero.

Assumptions used in applying the Black-Scholes option-pricing model to determine the estimated fair value of stock options granted involve inherent uncertainties and the application of judgment. As a result, if factors or expected outcomes change and significantly different assumptions or estimates are used, the expenses related to our equity-based compensation could be materially different.

SAFE Instruments and Warrants

For Legacy Heliogen's SAFE Instruments and preferred stock warrants, we determined the fair value of these instruments at each reporting period end and through the date of conversion as part of the Business Combination. The determination of fair value required significant judgment by management, including the valuation methodology used, weighting of potential scenarios, and discount rate. The SAFE Instruments and Legacy Heliogen preferred stock warrants were initially measured at fair value using a probability-weighted method considering two potential outcomes: a merger with a special purpose acquisition company exit scenario and a stay private scenario. On December 30, 2021, immediately prior to their conversion, the SAFE Instruments and Legacy Heliogen preferred stock warrants were remeasured at fair value utilizing the income approach based on the Merger occurring on the valuation date. In addition, we applied a discount for lack of marketability, which was estimated using the Black-Scholes option pricing model.

Following the closing of the Business Combination, Athena's public and private warrants became Heliogen warrants for which liability classification remained. At each reporting end, we are required to measure the fair value of the public and private warrants. The Public Warrants are traded on an exchange and thus management uses the closing price of the warrants at each period end. In assessing the valuation of the private warrants, management assessed the value holders of the private warrants would receive in a redemption scenario and concluded that due to the make-whole exercise provision, the value of private warrants approximates the value of the Public Warrants. Thus, we have estimated the fair value of the private warrants based on the closing price of the Public Warrants.

Business Combination

For our acquisition of HelioHeat GmbH, we accounted for the acquisition as a business combination under U.S. GAAP. Under business combination accounting, we estimate the fair value of assets acquired and liabilities assumed in a business combination. Goodwill, as of the acquisition date, is measured as the excess of consideration transferred over the net of the acquisition date fair values of the assets acquired and the liabilities assumed. Such valuations require us to make significant estimates and assumptions, especially with respect to intangible assets. Our estimates of fair value are based upon assumptions believed to be reasonable, but which are inherently uncertain and unpredictable, and as a result, our actual results may differ from estimates.

Contingent consideration arrangements are recognized at their acquisition date fair value using a probability-weighted discounted cash flow model and included as part of purchase price at the acquisition date. Contingent consideration arrangements are classified as liabilities and are remeasured to fair value at each reporting period, with any change in fair value being recognized in the consolidated statement of operations. The estimated fair value of the contingent consideration is based primarily on estimates of meeting the applicable contingency conditions as per the terms of the applicable agreements.

The purchase price allocation for the HelioHeat Acquisition is preliminary as of December 31, 2021 pending the completion of a valuation of the expected intangible asset to be recognized related to developed technology associated with HelioHeat's particle receiver technology and the completion of a valuation of this intangible asset. All other amounts recognized were finalized as of December 31, 2021.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

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

Item 8. Financial Statements and Supplementary Data

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Report of Independent Registered Public Accounting Firm

Shareholders and Board of Directors
Heliogen, Inc.
Pasadena, California

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of Heliogen, Inc. (the “Company”) as of December 31, 2021 and 2020, the related consolidated statements of operations, convertible preferred stock and shareholders’ equity (deficit), and cash flows for each of the years then ended, and the related notes (collectively referred to as the “consolidated financial statements”). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2021 and 2020, and the results of its operations and its cash flows for the years then ended, in conformity with accounting principles generally accepted in the United States of America.

Restatement to Correct 2021 Misstatements

As discussed in Note 3 to the consolidated financial statements, the 2021 financial statements have been restated to correct misstatements.

Basis for Opinion

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

We conducted our audits in accordance with the standards of the PCAOB and in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company’s internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ BDO USA, LLP

We have served as the Company’s auditor since 2020.

Los Angeles, California

March 31, 2022, except for the effects of the restatement discussed in Note 3, Government Grant paragraph in Note 2, grant revenue presented in Note 4, Income Taxes in Note 9 and Net Loss per Share in Note 11, which is dated May 23, 2022.

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

	December 31,	
	2021	2020
	(As Restated)	
ASSETS		
Cash and cash equivalents	\$ 190,081	\$ 18,334
Investments, available-for-sale (amortized cost of \$32,349)	32,332	—
Receivables	3,896	—
Prepaid and other current assets	874	241
Total current assets	227,183	18,575
Operating lease right-of-use assets	16,093	612
Property, plant, and equipment, net	4,102	575
Goodwill	4,204	—
Restricted cash	1,500	—
Other long-term assets	4,366	—
Total assets	\$ 257,448	\$ 19,762
LIABILITIES, CONVERTIBLE PREFERRED STOCK AND SHAREHOLDERS’ EQUITY (DEFICIT)		
Trade payables	\$ 4,645	\$ 307
Contract liabilities	513	—
Contract loss provisions	397	—
Debt, current portion	—	324
Accrued expenses and other current liabilities	6,974	525
Total current liabilities	12,529	1,156
Debt, net of current portion	35	87

Operating lease liabilities, net of current portion	14,183	403
Warrant liability	14,563	46
Other long-term liabilities	2,080	—
Total liabilities	43,390	1,692
Commitments and contingencies (see Note 14)		
Convertible preferred stock – Preferred shares, \$0.0001 par value; 10,000,000 shares authorized and no shares outstanding as of December 31, 2021; 121,348,911 shares authorized and 117,886,982 shares outstanding as of December 31, 2020 (see Note 5)	—	45,932
Shareholders' equity (deficit)		
Common stock, \$0.0001 par value; 500,000,000 shares authorized and 183,367,037 shares issued and outstanding (excluding restricted shares of 481,301) as of December 31, 2021; 320,000,000 shares authorized and 8,160,828 shares issued and outstanding as of December 31, 2020 (see Note 5)	18	1
Additional paid-in capital	380,624	1,309
Accumulated other comprehensive loss	(4)	—
Accumulated deficit	(166,580)	(29,172)
Total shareholders' equity (deficit)	214,058	(27,862)
Total liabilities, convertible preferred stock, and shareholders' equity (deficit)	\$ 257,448	\$ 19,762

The accompanying notes are an integral part of these audited Consolidated Financial Statements.

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

	Years ended December 31,	
	2021 (As Restated)	2020
Revenue:		
Sales revenue	7,362	200
Grant revenue	1,442	—
Total revenues	8,804	200
Cost of revenue:		
Cost of sales	5,762	417
Cost of grant revenue	3,177	—
Provision for contract losses	508	—
Total cost of revenue	9,447	417
Gross loss	(643)	(217)
Operating expenses:		
Selling, general, and administrative	29,844	3,713
Research and development	13,478	3,583
Total operating expenses	43,322	7,296
Operating loss	(43,965)	(7,513)
Interest income (expense), net	634	(3)
SAFE Instruments remeasurement	(86,907)	—
Warrant remeasurement	(6,651)	(7)
Other (expense) income, net	(517)	86
Net loss before taxes	(137,406)	(7,437)
Provision for income taxes	(2)	—
Net loss	(137,408)	(7,437)
Other comprehensive loss, net of taxes		
Unrealized losses on available-for-sale securities	(17)	—
Cumulative translation adjustment	13	—
Total comprehensive loss	\$ (137,412)	\$ (7,437)
Loss per share		
Loss per share – Basic and Diluted	\$ (11.48)	\$ (0.93)
Weighted average number of shares outstanding – Basic and Diluted	11,970,550	7,978,512

The accompanying notes are an integral part of these audited Consolidated Financial Statements.

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

Shareholders' Equity (Deficit)

	Convertible Preferred Stock		Special Stock		Common Stock		Additional Paid-in	Accumulated Other Comprehensive	Accumulated	Total
	Shares	Amount	Shares	Amount	Shares	Amount	Capital	Loss	Deficit	
December 31, 2019	50,588,630	\$ 35,691	1	\$ —	3,867,136	\$ 4	\$ 996	\$ —	\$ (21,735)	\$ (20,735)
Retroactive application of Exchange Ratio	51,260,712	—	1	—	3,918,511	(3)	3	—	—	—
December 31, 2019 as adjusted	101,849,342	35,691	2	—	7,785,647	1	999	—	(21,735)	(20,735)
Net loss	—	—	—	—	—	—	—	—	(7,437)	(7,437)
Issuance of preferred shares, net of issuance costs of \$20.0 thousand	16,037,640	10,241	—	—	—	—	—	—	—	—
Special Stock conversion	—	—	(2)	—	2	—	—	—	—	—
Share-based compensation	—	—	—	—	—	—	278	—	—	278
Shares issued for stock options exercised	—	—	—	—	375,179	—	32	—	—	32
December 31, 2020	117,886,982	\$ 45,932	—	\$ —	8,160,828	\$ 1	\$ 1,309	\$ —	\$ (29,172)	\$ (27,862)
Net loss (As Restated)	—	—	—	—	—	—	—	—	(137,408)	(137,408)
Other comprehensive loss	—	—	—	—	—	—	—	(4)	—	(4)
Share-based compensation	—	—	—	—	—	—	11,380	—	—	11,380
Shares issued for stock options exercised	—	—	—	—	4,756,937	—	462	—	—	462
Shares issued for stock warrants exercised	—	—	—	—	199,315	—	30	—	—	30
Conversion of preferred stock to common stock	(117,886,982)	(45,932)	—	—	121,038,967	12	45,920	—	—	45,932
Conversion of stock warrants to common stock	—	—	—	—	582,509	—	3,011	—	—	3,011
Conversion of SAFE instruments to common stock	—	—	—	—	20,080,464	2	170,316	—	—	170,318
Reverse recapitalization and PIPE financing, net	—	—	—	—	28,548,017	3	148,196	—	—	148,199
December 31, 2021 (As Restated)	—	\$ —	—	\$ —	183,367,037	\$ 18	\$ 380,624	\$ (4)	\$ (166,580)	\$ 214,058

The accompanying notes are an integral part of these audited Consolidated Financial Statements.

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

	Years Ended December 31,	
	2021	2020
	(As Restated)	
CASH FLOWS FROM OPERATING ACTIVITIES:		
Net loss	\$ (137,408)	\$ (7,437)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	562	139
Share-based compensation	11,380	278
SAFE Instruments remeasurement	86,907	—
Warrant remeasurement	6,651	7
Provision for contract losses, net	397	—
Non-cash operating lease expense	1,277	134
Other non-cash operating activities	583	—
Changes in assets and liabilities:		
Receivables	(3,597)	—
Prepaid and other current assets	(497)	(150)
Other long-term assets	(2,571)	—
Trade payables	1,885	(51)
Accrued expenses and other current liabilities	4,245	212
Contract liabilities	123	—
Operating lease liabilities	(1,061)	(134)
Other long-term liabilities	69	—
Net cash used in operating activities	(31,055)	(7,002)
CASH FLOWS FROM INVESTING ACTIVITIES:		
Capital expenditures	(3,836)	(295)
Purchases of available-for-sale investments	(49,304)	—
Maturities of available-for-sale investments	16,224	—
Acquisition of HelioHeat, net of cash acquired	(1,684)	—
Other investing activities	(46)	—
Net cash used in investing activities	(38,646)	(295)
CASH FLOWS FROM FINANCING ACTIVITIES:		
Proceeds from preferred shares, net of issuance costs of \$13.3 thousand	—	10,242

Proceeds from SAFE Instruments, net of issuance costs of \$30.1 thousand	83,411	—
Proceeds from Business Combination with Athena, net of transaction costs	159,400	—
Proceeds from Paycheck Protection Program loan	—	411
Repayments on Paycheck Protection Program loan	(411)	—
Proceeds from exercise of stock options	524	33
Proceeds from exercise of common stock warrants	30	—
Other financing costs	(6)	—
Net cash provided by financing activities	242,948	10,686
INCREASE IN CASH, CASH EQUIVALENTS AND RESTRICTED CASH	173,247	3,389
CASH, CASH EQUIVALENTS AND RESTRICTED CASH, BEGINNING OF THE YEAR	18,334	14,945
CASH, CASH EQUIVALENTS AND RESTRICTED CASH, END OF THE YEAR	\$ 191,581	\$ 18,334

The accompanying notes are an integral part of these audited Consolidated Financial Statements.

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Heliogen, Inc.
Notes to the Consolidated Financial Statements

1. Organization and Basis of Presentation

Background

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

Basis of Presentation

The accompanying consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America (“U.S. GAAP”) and include the accounts of Heliogen and the subsidiaries it controls. All material intercompany balances are eliminated in consolidation.

Emerging Growth Company Status

We are an “emerging growth company” as defined in Section 2(a) of the Securities Act of 1933, as amended, and we may take advantage of certain exemptions from various reporting requirements that are applicable to other public companies that are not emerging growth companies. Subject to certain conditions set forth in the JOBS Act, if, as an emerging growth company, we intend to rely on such exemptions, we are not required to, among other things: (a) provide an auditor’s attestation report on our system of internal control over financial reporting pursuant to Section 404(b) of the Sarbanes-Oxley Act of 2002; (b) provide all of the compensation disclosure that may be required of non-emerging growth public companies under the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2009; (c) comply with any requirement that may be adopted by the Public Company Accounting Oversight Board regarding mandatory audit firm rotation or a supplement to the auditor’s report providing additional information about the audit and the financial statements (auditor discussion and analysis); and (d) disclose certain executive compensation-related items such as the correlation between executive compensation and performance and comparisons of the Chief Executive Officer’s compensation to median employee compensation. We have elected not use the extended transition period for complying with any new or revised financial accounting standards, and as such, we are required to adopt new or revised standards at the same time as other public companies.

We will remain an emerging growth company until the earliest of (i) the last day of the fiscal year: (a) following March 19, 2026, the fifth anniversary of our IPO; (b) in which we have total annual gross revenue of at least \$1.07 billion; or (c) in which we are deemed to be a “large accelerated filer”, which means the market value of our common stock that is held by non-affiliates Accounting Oversight Board regarding mandatory audit firm rotation or a supplement to the auditor’s report providing additional information about the audit and the financial statements (auditor discussion and analysis); and (d) disclose certain executive compensation-related items such as the correlation between executive compensation and performance and comparisons of the Chief Executive Officer’s compensation to median employee compensation. We have elected not use the extended transition period for complying with any new or revised financial accounting standards, and as such, we are required to adopt new or revised standards at the same time as other public companies.

Athena Business Combination

On December 30, 2021 (the “Closing Date”), Heliogen, Inc., a Delaware corporation (“Legacy Heliogen”), Athena Technology Acquisition Corp., a Delaware corporation (“Athena”), and HelioMax Merger Sub, Inc., a Delaware corporation and a direct, wholly owned subsidiary of Athena (“Merger Sub”), consummated the closing of the transactions (the “Closing”) contemplated by the Business Combination Agreement, dated July 6, 2021, by and among Athena, Merger Sub, and Legacy Heliogen (the “Business Combination Agreement”), following the approval at the Special Meeting held on December 28, 2021.

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Heliogen, Inc.
Notes to the Consolidated Financial Statements

Pursuant to the terms of the Business Combination Agreement, a business combination of Legacy Heliogen and Athena was effected by the merger of Merger Sub with and into Legacy Heliogen, with Legacy Heliogen surviving as a wholly owned subsidiary of Athena (the “Merger.” and, together with the other transactions contemplated by the Business Combination Agreement, the “Business Combination”). In connection with the consummation of the Merger on the Closing Date, Athena changed its name from Athena Technology Acquisition Corp. to Heliogen, Inc. and Legacy Heliogen changed its name from Heliogen, Inc. to Heliogen Holdings, Inc.

Conversion and Exchange of Equity in Business Combination

- At the effective time of the Merger (the “Effective Time”), as a result of the Merger, each share of Legacy Heliogen capital stock that was then issued and outstanding (other than dissenting shares and shares owned by Athena, Merger Sub or Legacy Heliogen immediately prior to the Effective Time) was cancelled and converted into the right to receive 2.013 shares (the “Exchange Ratio”) of the Company’s common stock, par value \$0.0001 per share (“Common Stock”).

- At the Effective Time, as a result of the Merger, each option to purchase Legacy Heliogen capital stock that was outstanding and unexercised immediately prior to the Effective Time was assumed by the Company and converted into an option to purchase a number of shares of Common Stock (such option, an “Exchanged Option”) equal to the product (rounded down to the nearest whole number) of (x) the number of shares of Legacy Heliogen capital stock subject to such Legacy Heliogen option immediately prior to the Effective Time and (y) the Exchange Ratio, at an exercise price per share (rounded up to the nearest whole cent) equal to (1) the exercise price per share of such Legacy Heliogen option immediately prior to the Effective Time, divided by (2) the Exchange Ratio. Except as specifically provided in the Business Combination Agreement, following the Effective Time, each Exchanged Option will continue to be governed by the same terms and conditions (including vesting and exercisability terms) as were applicable to the corresponding Legacy Heliogen option immediately prior to the Effective Time.
- At the Effective Time, as a result of the Merger, each award of restricted stock units (“RSU Award”) in respect of Legacy Heliogen common stock outstanding as of immediately prior to the Effective Time was assumed by the Company and converted into an award of restricted stock units in respect of a number of shares of Common Stock (such award, an “Exchanged RSU Award”) equal to the product (rounded down to the nearest whole share) of (x) the number of shares of Legacy Heliogen common stock covered by the RSU Award and (y) the Exchange Ratio.
- At the Effective Time, as a result of the Merger, each share of common stock of Merger Sub issued and outstanding immediately prior to the Effective Time was cancelled and converted into and exchanged for one validly issued, fully paid and nonassessable share of common stock, par value \$0.001 per share, of Legacy Heliogen, the surviving corporation in the Merger.

Per the terms and conditions of the Business Combination Agreement and reflection of certain adjustments outlined therein, the consideration received by Legacy Heliogen equity holders was approximately 154.8 million shares of Common Stock. Additionally, approximately 45.8 million shares of Common Stock were attributed to shares issuable under outstanding Legacy Heliogen stock options, RSU Awards or restricted shares. As a result, a total of approximately 200.6 million shares comprises the total merger share consideration as outlined in the Business Combination Agreement valued at \$10.00 per share and reflecting 2.013 shares of the Company’s Common Stock issued for each Legacy Heliogen share of common stock issued and outstanding or issuable under outstanding Legacy Heliogen stock options, RSU Awards or restricted shares at the Closing Date. Also, immediately prior to and upon the Effective Time, certain investors subscribed for and purchased 16,500,000 shares of Common Stock for aggregate gross proceeds of \$165.0 million (the “PIPE Investment”).

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Heliogen, Inc.
Notes to the Consolidated Financial Statements

The following summarizes the number and ownership of the Company’s Common Stock outstanding following the consummation of the Business Combination:

	Shares	%
Heliogen Stockholders ⁽¹⁾	154,819	84.4
Athena Public Stockholders	2,271	1.2
Sponsor Shares ⁽²⁾⁽³⁾	9,267	5.1
Sponsor Shares ⁽⁴⁾	510	0.3
PIPE Investors	16,500	9.0
Total⁽¹⁾⁽²⁾	183,367	100.0

- (1) Excludes 40.8 million common shares issuable upon exercise of Heliogen’s outstanding stock options, 4.4 million common shares issuable upon vesting and settlement of Heliogen’s RSU Awards and 0.5 million restricted shares subject to vesting.
- (2) Does not take into account, at the time of the Closing Date, the dilutive impact of the shares of Common Stock issuable in connection with the Warrants (as defined in Note 5) totaling approximately 8.6 million shares, which became exercisable on March 18, 2022.
- (3) Shares attributable to Athena Technology Sponsor LLC (the “Sponsor”) received in exchange for the Class B common stock and private placement units (each unit comprising one share of common stock and one-third of one warrant) issued by Athena to the Sponsor in connection with Athena’s initial public offering.
- (4) Shares issued as consideration for anti-dilution rights waived by the Sponsor.

The following table reconciles the elements of the Business Combination to the consolidated statement of cash flows and the consolidated statement of convertible preferred stock and shareholders’ equity (deficit) for the year ended December 31, 2021:

<i>\$ in thousands</i>	
Cash - PIPE Investment	\$ 165,000
Cash - Athena Trust Account, net of redemptions and cash on hand	22,848
Less: Athena transaction costs and advisory fees paid	(16,186)
Less: Heliogen transaction costs and advisory fees paid	(12,262)
Net proceeds from Business Combination and PIPE financing	159,400
Less: Accrued transaction costs	(1,474)
Add: Prepaid expenses and receivables assumed as part of Business Combination	1,651
Less: Warrants assumed as part of Business Combination	(10,880)
Less: Accounts payable assumed as part of Business Combination	(498)
Reverse recapitalization and PIPE financing, net	\$ 148,199

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Heliogen, Inc.
Notes to the Consolidated Financial Statements

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

date. Accordingly, for accounting purposes, the consolidated financial statements of the post combination company represent a continuation of the historical consolidated financial statements of Legacy Heliogen, and the net assets of Athena are stated at historical cost, with no goodwill or other intangible assets recorded. This accounting determination was primarily based on the following as of the date of the Business Combination:

- Legacy Heliogen was assessed and determined not to be a variable interest entity (“VIE”) of Athena following the Merger, thus the voting interest model was applied;
- The pre-combination equity holders of Legacy Heliogen will hold the majority of shares of Common Stock and voting rights in the post combination company;
- Legacy Heliogen has the ability, pursuant to the Business Combination, to appoint six (6) of the seven (7) members of the post combination company’s Board of Directors (the “Board”);
- Senior management of Legacy Heliogen will comprise the senior management of the post combination company; and
- Operations of Legacy Heliogen will comprise the ongoing operations of post combination company.

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

Post combination, Heliogen Common Stock and warrants commenced trading on the New York Stock Exchange under the symbols “HLGN” and “HLGN.W,” respectively, on December 31, 2021.

Reclassifications

Certain immaterial prior period amounts, specifically warrant remeasurement, have been reclassified to conform to current period presentation. All dollar amounts (other than per share amounts) in the following disclosures are in thousands of United States dollars, unless otherwise indicated.

Correction of Immaterial Errors

Subsequent to issuing the condensed consolidated financial statements as of June 30, 2021 and March 31, 2021, management identified immaterial errors related to accrued payroll and revenue recognized for our non-governmental Engineering and Design (“E&D”) services contract. These errors resulted in the overstatement of net losses reported for the three and six months ended June 30, 2021 and the three months ended March 31, 2021.

In our accrual of payroll at June 30, 2021 and March 31, 2021, we incorrectly over accrued payroll costs due to a miscalculation of days to be accrued resulting in an overstatement of accrued payroll and selling, general and administrative expense.

Additionally, in our analysis of costs incurred for our non-governmental E&D services contract and determination of revenue to be recognized, we identified errors for the three and six months ended June 30, 2021, and three months ended March 31, 2021 due to incorrect identification and classification of costs. These errors resulted in an overstatement of contract liabilities with an understatement of revenues in addition to an understatement of cost of sales and overstatement of research and development expense.

We previously revised revenue recognition for the three months ended March 31, 2021 resulting in a reduction of revenue and cost of sales of \$0.2 million with corresponding increases to contract liabilities and research and development expense. This amount is included in the revisions summarized below.

Based on evaluation of the errors, management has concluded that the prior period errors were immaterial to the previously issued financial statements. As such, management has elected to correct the identified, immaterial errors in the prior periods. In doing so, balances in these consolidated financial Statements have been adjusted to reflect the correction in the proper periods. Future financial statements that include prior periods will be corrected, as needed, when issued.

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Heliogen, Inc. Notes to the Consolidated Financial Statements

The effects of correcting the immaterial errors in our previously filed Condensed Consolidated Financial Statements are as follows:

Condensed Consolidated Balance Sheets (amounts in thousands)

	As of June 30, 2021			As of March 31, 2021		
	As Initially Reported	Adjustments	As Revised	As Initially Reported	Adjustments	As Revised
Total assets	\$ 101,838	\$ —	\$ 101,838	\$ 92,229	\$ —	\$ 92,229
Contract liabilities	1,944	(275)	1,669	2,439	75	2,514
Accrued expenses and other current liabilities ⁽¹⁾	2,663	(271)	2,392	997	(191)	806
Total current liabilities	6,466	(546)	5,920	4,019	(116)	3,903
Accumulated deficit	(90,107)	546	(89,561)	(33,344)	116	(33,228)
Total shareholders’ deficit	(87,986)	546	(87,440)	(31,591)	116	(31,475)
Total liabilities, convertible preferred stock, and shareholders’ deficit	\$ 101,838	\$ —	\$ 101,838	\$ 92,229	\$ —	\$ 92,229

(1) At June 30, 2021, accrued expenses and other payables and current operating lease liabilities were combined and presented as accrued expenses and other current liabilities. Balances at March 31, 2021 have been conformed to the updated presentation.

Condensed Consolidated Statements of Operations and Comprehensive Loss (amounts in thousands, except per share amounts)

Three Months Ended June 30, 2021	Six Months Ended June 30, 2021
-------------------------------------	-----------------------------------

	As Initially Reported	Adjustments	As Revised	As Initially Reported	Adjustments	As Revised
Revenue	\$ 687	\$ 158	\$ 845	\$ 1,086	\$ 275	\$ 1,361
Cost of sales	687	158	845	1,086	275	1,361
Gross profit	—	—	—	—	—	—
Selling, general and administrative	4,340	(80)	4,260	6,683	(271)	6,412
Research and development	2,823	(158)	2,665	4,548	(275)	4,273
Total operating expenses	7,163	(238)	6,925	11,231	(546)	10,685
Operating loss	\$ (7,163)	\$ 238	\$ (6,925)	\$ (11,231)	\$ 546	\$ (10,685)
Net loss	\$ (56,571)	\$ 238	\$ (56,333)	\$ (60,935)	\$ 546	\$ (60,389)
Total comprehensive loss	\$ (56,573)	\$ 238	\$ (56,335)	\$ (60,949)	\$ 546	\$ (60,403)
Loss per share – Basic	\$ (10.72)	\$ 0.04	\$ (10.68)	\$ (12.03)	\$ 0.11	\$ (11.92)
Loss per share – Diluted	\$ (10.72)	\$ 0.04	\$ (10.68)	\$ (12.03)	\$ 0.11	\$ (11.92)

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Heliogen, Inc.
Notes to the Consolidated Financial Statements

	Three Months Ended March 31, 2021		
	As Initially Reported	Adjustments	As Revised
Revenue	\$ 591	\$ (75)	\$ 516
Cost of sales	591	(75)	516
Gross profit	—	—	—
Selling, general and administrative	2,343	(191)	2,152
Research and development	1,533	75	1,608
Total operating expenses	3,876	(116)	3,760
Operating loss	\$ (3,876)	\$ 116	\$ (3,760)
Net loss	\$ (4,172)	\$ 116	\$ (4,056)
Total comprehensive loss	\$ (4,184)	\$ 116	\$ (4,068)
Loss per share – Basic	\$ (0.86)	\$ 0.02	\$ (0.84)
Loss per share – Diluted	\$ (0.86)	\$ 0.02	\$ (0.84)

The adjustments summarized above and below reduced the increases to Accumulated Deficit and Total Shareholders' Deficit presented in the Condensed Consolidated Statements of Convertible Preferred Stock and Shareholders' Deficit for the three months ended June 30, 2021 and March 31, 2021 by \$0.2 million and \$0.1 million, respectively.

Condensed Consolidated Statements of Cash Flows(amounts in thousands)

	Six Months Ended June 30, 2021			Three Months Ended March 31, 2021		
	As Initially Reported	Adjustments	As Revised	As Initially Reported	Adjustments	As Revised
Net loss	\$ (60,935)	\$ 546	\$ (60,389)	\$ (4,172)	\$ 116	\$ (4,056)
Changes in asset and liabilities:						
Accrued expenses and other current liabilities ⁽¹⁾	1,384	(271)	1,113	418	(191)	227
Contract liabilities	1,944	(275)	1,669	2,439	75	2,514
Net cash used in operating activities	\$ (8,502)	\$ —	\$ (8,502)	\$ (625)	\$ —	\$ (625)

(1) At June 30, 2021, accrued expenses and other payables and current operating lease liabilities were combined and presented as accrued expenses and other current liabilities. Balances at March 31, 2021 have been conformed to the updated presentation.

Subsequent Events

We have evaluated subsequent events, if any, that would require an adjustment to the consolidated financial statements or require disclosure in the notes to the consolidated financial statements through the date of issuance of the consolidated financial statements. Where applicable, the notes to these consolidated financial statements have been updated to discuss all significant subsequent events which have occurred.

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Heliogen, Inc.
Notes to the Consolidated Financial Statements

2. Significant Accounting Policies

Use of Estimates

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

Segments

The Company operates as one operating segment. The Company's chief executive officer, who is the chief operating decision maker, reviews financial information on a consolidated basis for the purposes of allocating resources and assessing performance.

Cash and Cash Equivalents

We consider highly liquid investments with original maturities of three months or less at the time of purchase to be cash equivalents. As of December 31, 2021 and 2020, our cash and cash equivalents balances were \$190.1 million and \$18.3 million, respectively. Restricted cash of \$1.5 million is comprised of a standby letter of credit issued in relation to the lease for our new Long Beach, California facility.

Investments in Available-for-Sale Securities

Management classifies investments in fixed maturity securities at the acquisition date and reevaluates the classification at each balance sheet date. Held-to-maturity investments are carried at amortized cost, reflecting the ability and intent to hold the securities to maturity. Trading investments are securities acquired with the intent to sell in the near term and are carried at fair value with changes in fair value reported in earnings. All other fixed maturity securities are classified as available-for-sale and are carried at fair value with net unrealized gains or losses related to non-credit factors reported as a component of accumulated other comprehensive income. As of December 31, 2021, all investments in fixed maturities were classified as available-for-sale. The difference between the original cost and maturity value of a fixed maturity security is amortized to earnings using the interest method. As of December 31, 2021, interest receivable on our available-for-sale securities was \$0.3 million and included in receivables on our Consolidated Balance Sheets.

The Company reviews its available-for-sale securities portfolio for impairment and determines if impairment is related to credit loss or non-credit loss. In making the assessment of whether a loss is from credit or other factors, management considers the extent to which fair value is less than amortized cost, any changes to the rating of the security by a rating agency, and adverse conditions related to the security, among other factors. If this assessment indicates that a credit loss exists, the present value of cash flows expected to be collected from the security are compared to the amortized cost basis of the security. If the present value of cash flows is less than the amortized cost basis, a credit loss exists and an allowance is created, limited by the amount that the fair value is less than the amortized cost basis. Subsequent activity related to the credit loss component (e.g. write-offs, recoveries) is recognized as part of the allowance for credit losses on available-for-sale securities. For the year ended December 31, 2021, no credit losses were recognized on available-for-sale securities.

Accounts Receivable

We record accounts receivable based on contracted prices when we obtain an unconditional right to payment under the terms of our contracts. The carrying value of such receivables, net of the allowance for credit losses, represents the estimated net realizable value. Payment terms for sales are generally due upon demand or within 60 days of satisfying the associated performance obligations. As a practical expedient, we do not adjust the promised amount of consideration for the effects of a significant financing component when we expect, at contract inception, that the period between our transfer of a promised product or service to a customer and when the customer pays for that product or service will be one year or less. We typically do not include extended payment terms in our contracts with customers.

Allowance for Credit Losses

The allowance for credit losses is a valuation account that is deducted from a financial asset's amortized cost to present the net amount we expect to collect from such asset. We estimate allowances for credit losses using relevant available information from both internal and external sources. We monitor the estimated credit losses associated with our trade accounts receivable and unbilled accounts receivable based primarily on our collection history and the delinquency status of amounts owed to us, which we determine based on the aging of such receivables. Such methods and estimates are adjusted, as appropriate, for relevant past events, current conditions, and reasonable and supportable forecasts. We recognize write-offs within the allowance for credit losses when cash receipts associated with our financial assets are deemed uncollectible. Our allowance for credit losses balance was zero as of December 31, 2021 and 2020.

Heliogen, Inc. **Notes to the Consolidated Financial Statements**

Property, Plant and Equipment

We report our property, plant and equipment at cost, less accumulated depreciation. Cost includes the price paid to acquire or construct the assets, required installation costs, interest capitalized during the construction period, and any expenditures that substantially add to the value of or substantially extend the useful life of the assets. We capitalize costs related to computer software obtained or developed for internal use, which generally includes enterprise-level business and finance software that we customize to meet our specific operational requirements. We expense repair and maintenance costs at the time we incur them.

We begin depreciation for our property, plant, and equipment when the assets are placed in service. We consider such assets to be placed in service when they are both in the location and condition for their intended use. We compute depreciation expense using the straight-line method over the estimated useful lives of assets. We depreciate leasehold improvements over the shorter of their estimated useful lives or the remaining term of the lease. The estimated useful life of an asset is reassessed whenever applicable facts and circumstances indicate a change in the estimated useful life of such asset has occurred. See Note 7 to our consolidated financial statements for our discussion on property, plant and equipment. Depreciation expense for property, plant, and equipment was \$0.5 million and \$0.1 million for the years ended December 31, 2021 and 2020, respectively, and is recorded in Selling, General and Administrative Expense.

Leases

Upon commencement of a lease, we recognize a lease liability for the present value of the lease payments not yet paid, discounted using an interest rate that represents our ability to borrow on a collateralized basis over a period that approximates the lease term. We also recognize a lease asset, which represents our right to control the use of the underlying property, plant, or equipment, at an amount equal to the lease liability, adjusted for prepayments and initial direct costs.

We subsequently recognize the cost of operating leases on a straight-line basis over the lease term, and any variable lease costs, which represent amounts owed to the lessor that are not fixed per the terms of the contract, are recognized in the period in which they are incurred. Any costs included in our lease arrangements that are not directly related to the leased assets, such as maintenance charges, are included as part of the lease costs. Leases with an initial term of one year or less are considered short-term leases

and are not recognized as lease assets and liabilities. We also recognize the cost of such short-term leases on a straight-line basis over the term of the underlying agreement.

Many of our leases contain renewal options that are exercisable at our discretion. At the commencement date of a lease, we include in the lease term any periods covered by a renewal option, to the extent we are reasonably certain to exercise such options. In making this determination, we seek to align the lease term with the expected economic life of the underlying asset.

Goodwill

Goodwill represents the excess of the purchase price over the estimated fair value of net tangible and identifiable intangible assets acquired in business combinations. Goodwill is not amortized but is evaluated for impairment at the reporting unit level. The Company determined it has one reporting unit as of December 31, 2021, which is the same as its single operating segment. The Company performs its goodwill impairment evaluation at least annually, as of October 1, or more frequently if events or changes in circumstances indicate that it is more likely than not that the fair value of the Company's reporting unit is less than its carrying value. The Company may first apply a qualitative assessment to determine if it is more likely than not that goodwill is impaired. If the qualitative assessment indicates that it is more likely than not that impairment exists, or if the Company chooses to bypass the assessment, a quantitative assessment is performed, which involves comparing the fair value of the reporting unit to its carrying value, including goodwill. If the carrying value of the reporting unit exceeds its estimated fair value, the Company would record an impairment loss equal to the excess. The Company performed its annual goodwill assessment as of October 1, 2021 and concluded it was more likely than not that the fair value of our reporting unit exceeds its carrying value, and no impairment loss was recognized during the year ended December 31, 2021.

As of December 31, 2021, the Company had goodwill of \$4.2 million related to our acquisition of HelioHeat GmbH ("HelioHeat") in September 2021 (the "HelioHeat Acquisition"). See Note 6 for additional information on the HelioHeat Acquisition and goodwill. The Company had no goodwill balance as of December 31, 2020, and there were no accumulated impairment losses as of December 31, 2021 and 2020.

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Heliogen, Inc. Notes to the Consolidated Financial Statements

Capitalized Implementation Costs

Implementation costs incurred in cloud computing hosting arrangements that are service contracts are capitalized. These costs include external direct costs for materials and services. Software maintenance and training costs are expensed in the period in which they are incurred. The capitalized implementation costs are recorded within other long-term assets in our Consolidated Balance Sheets and are amortized using the straight-line method to selling, general, and administrative expenses over the term of the cloud computing hosting arrangement, including reasonably certain renewals, beginning when the module or component of the hosting arrangement is ready for its intended use. Cash payments for capitalized implementation costs are classified as cash outflows from operating activities. During 2021, we capitalized cloud computing implementation costs for enterprise resource planning systems of \$1.2 million. Amortization expense related to capitalized cloud computing implementation costs was less than \$49 thousand for the year ended December 31, 2021. No amounts were recognized as of or for the year ended December 31, 2020.

Asset Impairments

We assess long-lived assets classified as "held and used," including our property, plant and equipment, operating lease assets and finite-lived intangible assets, for impairment whenever events or changes in circumstances arise, including consideration of technological obsolescence, that may indicate that the carrying amount of such assets may not be recoverable. These events and changes in circumstances may include a significant decrease in the market price of a long-lived asset; a significant adverse change in the extent or manner in which a long-lived asset is being used or in its physical condition; a significant adverse change in the business climate that could affect the value of a long-lived asset; an accumulation of costs significantly in excess of the amount originally expected for the acquisition or construction of a long-lived asset; a current-period operating or cash flow loss combined with a history of such losses or a projection of future losses associated with the use of a long-lived asset; or a current expectation that, more likely than not, a long-lived asset will be sold or otherwise disposed of significantly before the end of its previously estimated useful life. For purposes of recognition and measurement of an impairment loss, long-lived assets are grouped with other assets and liabilities at the lowest level for which identifiable cash flows are largely independent of the cash flows of other assets and liabilities. For the years ended December 31, 2021 and 2020, we recorded no impairments.

When impairment indicators are present, we compare undiscounted future cash flows, including the eventual disposition of the asset group at market value, to the asset group's carrying value to determine if the asset group is recoverable. If the carrying value of the asset group exceeds the undiscounted future cash flows, we measure any impairment by comparing the fair value of the asset group to its carrying value. Fair value is generally determined by considering (i) internally developed discounted cash flows for the asset group, (ii) third-party valuations, and/or (iii) information available regarding the current market value for such assets. If the fair value of an asset group is determined to be less than its carrying value, an impairment in the amount of the difference is recorded in the period that the impairment indicator occurs. Estimating future cash flows requires significant judgment, and such projections may vary from the cash flows eventually realized.

We consider a long-lived asset to be abandoned after we have ceased use of the asset and we have no intent to use or repurpose it in the future. Abandoned long-lived assets are recorded at their salvage value, if any.

Debt

Coronavirus Aid, Relief, and Economic Security ("CARES") Act. On March 27, 2020, President Trump signed into law the CARES Act. The CARES Act appropriated funds for the Small Business Association Paycheck Protection Program loans that are forgivable, in certain situations, to promote continued employment, as well as Economic Injury Disaster Loans to provide liquidity to small businesses harmed by COVID-19. During 2020, we obtained a loan under this program of \$0.4 million. We repaid the loan in its entirety on March 11, 2021, including accrued interest of \$3 thousand.

Other Debt. As of December 31, 2021, we had debt outstanding of \$35 thousand that was assumed as part of the HelioHeat Acquisition. We have no other debt obligations at December 31, 2021.

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Heliogen, Inc. Notes to the Consolidated Financial Statements

Revenue Recognition

We recognize revenue over time as work is performed using the incurred costs method, which we believe is the method that most accurately reflects our progress

toward satisfaction of the performance obligation. Under this method, revenue arising from fixed-price contracts is recognized as work is performed based on the ratio of costs incurred to date to the total estimated costs at completion of the performance obligations.

Incurred costs include all direct material, labor, and subcontract costs, and those indirect costs related to contract performance, such as indirect labor, supplies, and tools. Project material costs are included in incurred costs when the project materials have been installed by being permanently attached or fitted. Cost-based input methods of revenue recognition require us to make estimates of net contract revenues and costs to complete the projects. In making such estimates, significant judgment is required to evaluate assumptions related to the amount of net contract revenues, including the impact of any performance incentives, liquidated damages, and other payments to customers. Significant judgment is also required to evaluate assumptions related to the costs to complete the projects, including materials, labor, contingencies, and other system costs. If the estimated total costs on any contract are greater than the net contract revenues, we recognize the entire estimated loss in the period the loss becomes known and can be reasonably estimated and present such losses as contract loss provisions. Following recognition of contract loss provisions, we amortize the loss recognized in future periods as a reduction to cost of revenues using a similar method of measuring progress for each contract as done for revenue being recognized.

Our contracts with customers may include multiple promised goods and services. In such cases, we identify performance obligations by evaluating whether the promised goods and services are capable of being distinct within the context of the contract at contract inception. Promised goods and services that are not distinct at contract inception are combined. Once we identify the performance obligations, we determine a transaction price based on contractual amounts and an estimate of variable consideration. We allocate the transaction price to each performance obligation based on the relative stand-alone selling price (“SSP”) maximizing the use of observable inputs. Judgment is exercised to determine the SSP of each distinct performance obligation.

Contract Assets and Liabilities. Billing practices are governed by the contract terms of each project based upon costs incurred, achievement of milestones or predetermined schedules. Billings do not necessarily correlate with revenue recognized over time using the percentage-of-completion method. Contract assets include unbilled amounts typically resulting from revenue under long-term contracts when the percentage-of-completion method of revenue recognition is utilized and revenue recognized exceeds the amount billed to the customer. Contract liabilities consist of deferred revenue for advance payments and billings in excess of revenue recognized. When we receive consideration, or such consideration is unconditionally due, from a customer prior to transferring goods or services to the customer under the terms of a sales contract, we record deferred revenue, which represents a contract liability.

Retainage, included in contract assets, represent the amounts withheld from billings by our clients pursuant to provisions in the contracts and may not be paid to us until the completion of specific tasks or the completion of the project and, in some instances, for even longer periods. Retainage may also be subject to restrictive conditions such as performance guarantees.

As a practical expedient, we do not adjust the consideration in a contract for the effects of a significant financing component when we expect, at contract inception, that the period between a customer’s advance payment and our transfer of a promised product or service to the customer will be one year or less. Additionally, we do not adjust the consideration in a contract for the effects of a significant financing component when the consideration is received as a form of performance security.

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Heliogen, Inc.

Notes to the Consolidated Financial Statements

Government Grants

We assess government contracts received, including cost reimbursement agreements, to determine if the agreement should be accounted for as an exchange transaction or a grant. An agreement is accounted for as a grant if the resource provider does not receive commensurate value in return for the assets transferred. The Company accounts for government contracts in which the resource provider is not receiving commensurate value as a government grant through analogy to International Accounting Standards 20 (“IAS 20”), *Accounting for Government Grants and Disclosure of Government Assistance* Funds to be received under a government grant are presented as grant revenue if the grant is providing support for the Company’s ongoing major and central, revenue-generating activities. Grant revenue is recognized as the related reimbursable expenses are incurred and both of the following conditions are met: (1) we are able to comply with the relevant conditions of the grant and (2) the grant will be received. Grant revenue is presented gross of the related reimbursable expenses in the Company’s consolidated statements of operations; the related reimbursable expenses are expensed as incurred and presented separately as cost of grant revenue. See Note 4 of our consolidated financial statements for further discussion on government grants.

Advertising Costs

Advertising costs are expensed as incurred and totaled \$0.8 million and \$0.2 million, for the years ended December 31, 2021 and 2020, respectively. Advertising costs are presented within selling, general, and administrative expense in our consolidated statements of operations.

Research and Development

We incur research and development costs during the process of researching and developing new products and enhancing our existing products, technologies, and manufacturing processes. Our research and development costs consist primarily of employee compensation, materials and outside services. We expense these costs as incurred until the resulting product has been completed, tested, and made ready for commercial scale-up.

Share-Based Compensation

We recognize share-based compensation expense for the estimated fair value of equity awards issued as compensation to individuals over the requisite service period, which is generally four years. We account for forfeitures as they occur. Accordingly, if an individual’s continuous service is terminated, all previously unvested awards granted to such individual are forfeited, which results in a benefit to share-based compensation expense in the period of termination equal to the cumulative expense recorded through the termination date for the unvested awards. For employee stock awards with graded vesting schedules and only services conditions, we recognize share-based compensation expense on a straight-line basis over the total requisite service period of the award, ensuring that cumulative recorded stock-based compensation expense equals the grant date fair value of vested awards at each period-end. For awards with graded vesting schedules that contain a market or performance condition, we recognize share-based compensation expense using the graded vesting attribution method, in which we concurrently recognize compensation cost over the requisite service period for each separately-vesting tranche.

Commitments and Contingencies

We record liabilities for loss contingencies arising from claims, assessments, litigation, fines and penalties, and other sources when it is probable that a liability has been incurred and the amount of the assessment can be reasonably estimated. Legal costs incurred in connection with loss contingencies are expensed as incurred.

Income Taxes

We use the asset and liability method to account for income taxes whereby we calculate deferred tax assets or liabilities using the enacted tax rates and tax law applicable to when any temporary differences are expected to reverse. We establish valuation allowances, when necessary, to reduce deferred tax assets to the extent it is more likely than not that such deferred tax assets will not be realized.

Heliogen, Inc.
Notes to the Consolidated Financial Statements

Income tax expense includes (i) deferred tax expense, which generally represents the net change in deferred tax assets or liabilities during the year plus any change in valuation allowances, and (ii) current tax expense, which represents the amount of tax currently payable to or receivable from taxing authorities. We only recognize tax benefits related to uncertain tax positions that are more likely than not of being sustained upon examination. For those positions that satisfy such recognition criteria, the amount of tax benefit that we recognize is the largest amount of tax benefit that is more likely than not of being sustained on ultimate settlement of the uncertain tax position. The Company's policy is to recognize interest and penalties related to uncertain tax positions, if any, in the income tax provision.

Fair Value Measurements

We measure certain assets and liabilities at fair value, which is defined as the price that would be received from the sale of an asset or paid to transfer a liability (i.e., an exit price) on the measurement date in an orderly transaction between market participants in the principal or most advantageous market for the asset or liability. Our fair value measurements use the following hierarchy, which prioritizes valuation inputs based on the extent to which the inputs are observable in the market.

Level 1 — Valuation techniques in which all significant inputs are unadjusted quoted prices from active markets for assets or liabilities that are identical to the assets or liabilities being measured.

Level 2 — Valuation techniques in which significant inputs include quoted prices from active markets for assets or liabilities that are similar to the assets or liabilities being measured and/or quoted prices for assets or liabilities that are identical or similar to the assets or liabilities being measured from markets that are not active. Also, model-derived valuations in which all significant inputs are observable in active markets are Level 2 valuation techniques.

Level 3 — Valuation techniques in which one or more significant inputs are unobservable. Such inputs reflect our estimate of assumptions that market participants would use to price an asset or liability.

Accounting Standards

In December 2019, the FASB issued ASU No. 2019-12, *Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes* ("ASU 2019-12"). The amendments in ASU 2019-12 simplify the accounting for income taxes by removing certain exceptions to the general principles in Topic 740. The amendments also improve consistent application of and simplify U.S. GAAP for other areas of Topic 740 by clarifying and amending existing guidance. We adopted ASU 2019-12 on January 1, 2021. The adoption did not have a material impact on our consolidated financial statements.

In August 2020, the FASB issued ASU No. 2020-06, *Debt—Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging—Contracts in Entity's Own Equity (Subtopic 815-40): Accounting for Convertible Instruments and Contracts in an Entity's Own Equity* ("ASU 2020-06"). The amendments eliminate two of the three accounting models that require separate accounting for convertible features of debt securities, simplify the contract settlement assessment for equity classification, require the use of the if-converted method for all convertible instruments in the diluted earnings per share calculation and expand disclosure requirements. The amendments are effective for annual and interim reporting periods beginning after December 15, 2021, with early adoption permitted for reporting periods beginning after December 15, 2020. The guidance can be applied on a full retrospective basis to all periods presented or a modified retrospective basis with a cumulative effect adjustment to the opening balance of retained earnings during the period of adoption. We are continuing to evaluate the impacts of ASU 2020-06 but do not expect adoption to have a material impact on our consolidated financial statements.

Heliogen, Inc.
Notes to the Consolidated Financial Statements

In October 2021, the FASB issued ASU No. 2021-08, *Business Combinations (Topic 805): Accounting for Contract Assets and Contract Liabilities from Contracts with Customers* ("ASU 2021-08"). This guidance creates an exception to the general recognition and measurement principle for contract assets and contract liabilities from contracts with customers acquired in a business combination, under which an acquirer applies ASC 606, *Revenue from Contracts with Customers*, to recognize and measure contract assets and contract liabilities as of the acquisition date, as if the acquirer had entered into the original contract at the same date and on the same terms as the acquiree. We early adopted the amendments in ASU 2021-08 in 2021 and applied the amendments retrospectively to all business combinations during the year, including the contract liability recognized for customer contracts assumed in the HelioHeat Acquisition.

In November 2021, the FASB issued ASU 2021-10, *Government Assistance (Topic 832): Disclosures by Business Entities about Government Assistance* ("ASU 2021-10"). The amendment establishes financial disclosure requirements for business entities that receive government assistance that they account for by analogizing to a grant model (for example, in International Accounting Standard (IAS) 20, *Accounting for Government Grants and Disclosure of Government Assistance*), or a contribution model (for example, in ASC 958-605, *Not-for-Profit Entities - Revenue Recognition*). The Company early adopted this standard effective December 31, 2021 and has included the required disclosures in Note 4 related to its government grant awarded in 2021.

3. Restatement of Previously Issued Consolidated Financial Statements

As part of the Company's accounting for revenue contracts with customers during the first quarter of 2022, management considered ongoing contracts that were entered into and accounted for during the year ended December 31, 2021. During this evaluation, management determined that a government contract which had previously been assessed as within the scope of ASC 606, *Revenue from Contract with Customers* ("ASC 606"), represents a government grant and therefore not within the scope of ASC 606. The impact of this revised conclusion resulted in (i) the separate presentation of amounts previously presented as revenue and cost of revenue as grant revenue and cost of grant revenue, respectively, (ii) no change in total revenue, and (iii) a reduction in total cost of revenue, including the reversal of a contract loss recognized during the year ended December 31, 2021. There were also related changes to the consolidated balance sheet as of December 31, 2021, the consolidated statements of operations and comprehensive loss, consolidated statement of convertible preferred stock and shareholder's equity (deficit), and consolidated statement of cash flows, each for the year ended December 31, 2021, and the Company's loss per share. Additionally, management recorded an immaterial correction resulting in an increase to cost of revenue and decrease to selling, general and administrative expense. No adjustments were identified as of and for the year ended December 31, 2020. Refer to Note 2 for discussion of the Company's accounting for government grants and Note 4 for amounts recognized relating to its government grant.

The following table sets forth the consolidated balance sheet, including the balances as reported, adjustments and the as restated balances as of December 31, 2021:

<i>\$ in thousands</i>	As of December 31, 2021		
	As Reported	Adjustments	As Restated
Contract loss provisions	\$ 5,180	\$ (4,783)	\$ 397
Total current liabilities	17,312	(4,783)	12,529
Total liabilities	48,173	(4,783)	43,390
Accumulated deficit	(171,363)	4,783	(166,580)
Total shareholders' equity	209,275	4,783	214,058

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Heliogen, Inc.
Notes to the Consolidated Financial Statements

The following table sets forth the consolidated statement of operations, including the balances as reported, adjustments and the as restated balances as of the years ended December 31, 2021:

<i>\$ in thousands, except per share data</i>	Year ended December 31, 2021		
	As Reported	Adjustments	As Restated
Revenue:			
Sales revenue	\$ 8,804	\$ (1,442)	\$ 7,362
Grant revenue	—	1,442	1,442
Total revenue	8,804	—	8,804
Cost of revenue:			
Cost of revenue	7,203	(1,441)	5,762
Cost of grant revenue	—	3,177	3,177
Provision for contract losses	6,485	(5,977)	508
Total cost of revenue	13,688	(4,241)	9,447
Gross loss	(4,884)	4,241	(643)
Selling, general, and administrative	30,386	(542)	29,844
Total operating expenses	43,864	(542)	43,322
Operating loss	(48,748)	4,783	(43,965)
Net loss before taxes	(142,189)	4,783	(137,406)
Net loss	(142,191)	4,783	(137,408)
Total comprehensive loss	\$ (142,195)	\$ 4,783	\$ (137,412)
Loss per share – Basic and Diluted	(11.88)	0.40	(11.48)

The adjustments summarized above reduced Accumulated Deficit and increased Total Shareholders' Equity presented in the Consolidated Statements of Convertible Preferred Stock and Shareholders' Deficit for the year ended December 31, 2021 by \$4.8 million.

The following table sets forth the consolidated statement of cash flows including the balances as reported, adjustments and the as restated balances as of the years ended December 31, 2021:

<i>\$ in thousands</i>	Year ended December 31, 2021		
	As Reported	Adjustments	As Restated
Cash flows from operating activities:			
Net Loss	\$ (142,191)	\$ 4,783	\$ (137,408)
Adjustments to reconcile net loss to net cash used in operating activities:			
Provision for contract losses, net	5,180	(4,783)	397

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Heliogen, Inc.
Notes to the Consolidated Financial Statements

4. Revenue (As Restated)

Disaggregated Revenue

We disaggregate revenue into the following revenue categories:

<i>\$ in thousands</i>	Years ended December 31,	
	2021 (As Restated)	2020
Project revenue	\$ 900	\$ —
Services revenue	6,462	200
Grant revenue	1,442	—
Total revenue	\$ 8,804	\$ 200

Project revenue consists of amounts recognized under contracts with customers for the development, construction and delivery of commercial-scale concentrated solar energy facilities. Services revenue consists of amounts recognized under contracts with customers for the provision of engineering, R&D or other similar services in our field of expertise. Revenue recognized during 2021 and 2020 included non-governmental customers in Australia and Europe.

In the fourth quarter of 2021, the Company finalized a \$39.0 million award (the “DOE Award”) with the U.S. Department of Energy’s Solar Energy Technology Office (the “DOE”), of which \$3.9 million will be paid directly by the DOE to another party providing services under the DOE Award at the Company’s direction. Under the DOE Award, the Company will apply up to \$35.1 million in funds received under the DOE Award pursuant to budget periods defined in the DOE Award through 2024 as reimbursement for costs incurred in completing the tasks specified in the DOE Award that are part of the commercial scale facility being constructed for a third-party customer pursuant to a separate customer contract. The amount and timing of funds received under the DOE Award will be determined by reimbursable costs, including permitted indirect costs, incurred in completing specific tasks. The DOE Award contains certain terms and conditions which requires the Company to comply with government regulations related to accounting and reporting and requires the Company to perform the tasks within specified time periods in a satisfactory manner. Noncompliance with any of the terms or conditions under the DOE Award could impact the Company’s ability to receive all funds allocated under the DOE Award or could result in the recapture of amounts paid to the Company by the DOE. Management has evaluated the recapture provisions with the DOE Award and concluded that it is not probable that the recapture provisions will be triggered. Both the Company and DOE can terminate the DOE Award for convenience. Under such a termination, the Company will be permitted to seek reimbursement of valid costs incurred, including permitted indirect costs, through the date of termination. Amounts reimbursable under the DOE Award for the year ended December 31, 2021 and presented as grant revenue were approximately \$1.4 million related to which the Company recognized \$3.2 million of incurred costs presented as cost of grant revenue.

Performance Obligations

Revenue recognized under contracts with customers relates solely to the performance obligations satisfied in 2021 with no revenue recognized from performance obligations satisfied in prior periods. We expect to recognize revenue of approximately \$3.4 million through 2023 for the remaining work over the noncancelable term under our existing contracts with customers. During the year ended December 31, 2021, we recognized provisions for contract losses of \$0.5 million related to two contracts with customers as estimated costs to satisfy performance obligations exceeded consideration to be received, of which we amortized \$0.1 million as a reduction to cost of sales incurred during 2021.

Accounts Receivable and Contract Assets

As of December 31, 2021, our receivables of \$3.9 million included \$2.1 million accounts receivables related to our contracts with customers which consisted of trade receivables of \$0.9 million and contract assets of \$1.2 million. Additionally, our receivables included \$1.4 million of unbilled amounts related to the DOE Award at December 31, 2021 that were reimbursable to the Company based on qualifying costs incurred during 2021. We had no accounts receivable balance as of December 31, 2020.

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Heliogen, Inc. Notes to the Consolidated Financial Statements

Contract Liabilities

As of December 31, 2021, our contract liabilities for contracts with customers were \$0.5 million, respectively. Activity included in contract liabilities during the 2021 primarily consisted of additions for deferred revenue of \$5.8 million offset by revenue recognized of \$5.3 million. We had no contract liability balance as of December 31, 2020.

5. Convertible Instruments and Equity

Preferred Stock

Prior to the Business Combination, the Company had outstanding shares of convertible preferred stock. Immediately prior to the Effective Time, all shares of outstanding preferred stock were automatically converted into 60,120,423 shares of Legacy Heliogen common stock at the effective conversion prices, which were then converted into 121,038,967 shares of the Company’s common stock with the application of the Exchange Ratio as a result of the Merger as discussed in Note 1.

Following the conversion of the Legacy Heliogen preferred stock immediately prior to the Effective Time and pursuant to the Company’s Second Amended and Restated Certificate of Incorporation, as of December 31, 2021, we had authorized 10,000,000 shares of preferred stock, \$0.0001 par value, of which no shares have been issued. The Board has the authority to issue shares of preferred stock and to determine the rights, preferences, privileges and restrictions, including voting rights, of those shares.

Common Stock

As of December 31, 2021 and December 31, 2020, authorized shares of common stock, \$0.0001 par value, were 500,000,000 shares and 320,000,000 shares, respectively, of which 183,367,037 shares were issued and outstanding as of December 31, 2021, and 8,160,828 shares were issued and outstanding as of December 31, 2020.

Warrants

The Company’s warrant liability as of December 31, 2021 includes public warrants (the “Public Warrants”) and private placement warrants (the “Private Warrants,” and together with the Public Warrants, the “Warrants”), which were originally issued by Athena in Athena’s initial public offering and were assumed by the Company as part of the Business Combination. The Company has the ability to redeem outstanding Public Warrants, commencing 90 days after March 18, 2022, the date the Public Warrants become exercisable and prior to their expiration, at a price of \$0.01 per warrant, provided that the last reported sales price of the common stock equals or exceeds \$8.00 per share for any 20 trading days within a 30 trading-day period ending on the third trading day prior to the notice date of redemption. If and when the Public In addition, the Company has the ability to redeem all (but not less than all) of the outstanding Warrants, including Private Warrants, at a price of \$0.10 per Warrant if certain conditions are satisfied, but primarily the last reported sale prices of the Company’s Common Stock equals or exceeds \$10.00. The Company evaluated the Public Warrants and Private Warrants and concluded that a provision in the Warrant Agreement related to certain tender or exchange offers precludes the Warrants from being accounted for as components of equity. As the Warrants meet the definition of a derivative, the Warrants are recorded on the Consolidated Balance Sheets as a liability and measured at fair value at each reporting date, and the change in fair value is reported on the Consolidated Statements of Operations and Comprehensive Loss.

Prior to the Business Combination, the Company had outstanding common stock warrants and preferred stock warrants (together, the “Legacy Warrants”). The Company determined that the preferred stock warrants were not a legal form of debt (i.e., no creditors’ rights) and allowed for redemption based upon certain events that are outside of the control of the Company. Therefore, the preferred stock warrants were classified as liabilities pursuant to ASC 480, *Distinguishing Liabilities from Equity*, and were measured at fair value at each reporting period, with changes in fair value recorded within the Consolidated Statements of Operations and Comprehensive Loss. Immediately prior to the Effective Time, the Legacy Warrants automatically converted to 289,333 shares of Legacy Heliogen common stock, which were converted into 582,509 shares of the Company’s Common Stock with the application of the Exchange Ratio as a result of the Merger as discussed in Note 1.

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In connection with the concurrent execution of the commercial-scale demonstration agreement (the “Project Agreement”) and collaboration agreement (the “Collaboration Agreement”) with a customer in March 2022, the Company issued warrants permitting the customer to purchase in the aggregate approximately 4.56 million shares of the Company’s Common Stock (“Warrant Shares”) at an exercise price of \$0.01 per share. These warrants expire upon the earlier of a change in control of the Company or March 28, 2027. Warrants to purchase approximately 1.8 million Warrant Shares vested immediately upon execution of the collaboration agreement and the balance of the warrants will vest pro rata with certain payments required to be made under the Project Agreement and also based on the customer reaching certain specified performance goals under the Collaboration Agreement.

SAFE Instruments

In the first half of 2021, we entered into SAFE Instruments and received \$83.4 million in gross proceeds from third-party investors in connection with a private round of funding to provide investors an opportunity to convert into common or preferred stock, upon defined triggering events. The Company determined that the SAFE Instruments were not legal form debt (i.e., no creditors’ rights) and allowed for redemption based upon certain events that are outside of the control of the Company. Therefore, the SAFE Instruments were classified as liabilities pursuant to ASC 480 and were measured at fair value at each reporting period, with changes in fair value recorded within the Consolidated Statements of Operations and Comprehensive Loss.

Immediately prior to the Effective Time of the Merger, the SAFE Instruments were automatically converted into 9,973,979 shares of Legacy Heliogen common stock, which were converted into 20,080,464 shares of the Company’s Common Stock with the application of the Exchange Ratio as a result of the Merger as discussed in Note 1.

6. Acquisition

In August 2021, Heliogen entered into an agreement to acquire 100% of the equity interests of HeliHeat, a private limited liability company in Germany (the “HeliHeat Agreement”). The HeliHeat Acquisition closed on September 1, 2021. HeliHeat is engaged in the development, planning and construction of renewable energy systems and components, including a novel solar receiver. Heliogen acquired HeliHeat in order to own and use HeliHeat’s particle receiver technology in future commercial-scale facilities for our customers. Pursuant to the HeliHeat Agreement, at closing, cash consideration of approximately \$1.0 million was paid to HeliHeat’s shareholders, \$0.5 million was deposited in an escrow account that becomes payable to HeliHeat’s shareholders to the extent the funds are not used by Heliogen to offset certain future costs on HeliHeat’s active customer projects, and \$0.2 million was used to repay certain of HeliHeat’s outstanding indebtedness. Additionally, pursuant to the HeliHeat Agreement, \$3.0 million is payable to HeliHeat’s shareholders in future periods, of which \$0.5 million is payable upon service conditions being met over a three-year period for retained employees and \$2.5 million subject to earn-out provisions is payable if Heliogen uses and sells HeliHeat’s solar receiver technology in a commercial product, fully operational and tested, within five years of closing.

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

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

(1) Includes \$0.5 million of cash paid to an escrow that becomes payable to the selling shareholders of HeliHeat to the extent the funds are not used to offset certain costs incurred for the assumed customer projects. The amount is being treated as consideration transferred as the release of the funds is likely to occur.

We accounted for the HeliHeat Acquisition using the acquisition method of accounting, which requires, among other things, that assets acquired at their fair values and liabilities assumed be recognized on the balance sheet as of the acquisition date. The purchase price allocation for the HeliHeat Acquisition is preliminary as of December 31, 2021 pending the completion of a valuation of the expected intangible asset to be recognized related to developed technology associated with HeliHeat’s particle receiver technology and the completion of a valuation of this intangible asset. All other amounts recognized were finalized as of December 31, 2021.

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The following table summarizes the preliminary purchase price allocation as of the acquisition date (\$ in thousands):

Cash and cash equivalents	\$ 30
Prepaid and other current assets	33
Property, plant and equipment, net	6
Goodwill	4,204
Total assets acquired	4,273
Accrued expenses and other current liabilities	74
Contract liabilities ⁽¹⁾	390
Debt	41
Total liabilities assumed	505
Net assets acquired	\$ 3,768

(1) The acquired contract liability for the assumed customer contracts was measured in accordance with ASC 606 pursuant to ASU 2021-08, which the Company early adopted.

The preliminary purchase consideration allocation resulted in the recognition of \$4.2 million in goodwill, of which none is expected to be tax deductible. Goodwill represents the value expected to be received from the synergies of integrating HeliHeat’s operations with Heliogen operations to expand commercial opportunities and the assembled workforce in place.

The fair value of contingent consideration is approximately \$2.0 million. We believe the payment of this consideration to be probable and have estimated its fair value as of the acquisition date using a probability-weighted discounted cash flow model utilizing estimated timing for the commissioning and required operational period of a commercial facility using the acquired particle receiver technology.

During the year ended December 31, 2021, we incurred approximately \$0.1 million of acquisition costs that were expensed as incurred.

During the year ended December 31, 2021, we recognized revenues of \$0.4 million and a net loss of \$0.7 million related to HelioHeat's operations. Pro forma financial information for HelioHeat has not been provided as it has been deemed immaterial.

7. Property, Plant and Equipment

The balance of property, plant and equipment, net is as follows:

<i>\$ in thousands</i>	Estimated Useful Lives in Years	December 31,	
		2021	2020
Property, plant, and equipment, gross			
Leasehold improvements	5 - 7	\$ 699	\$ 575
Computer equipment	2 - 3	1,532	149
Machinery, vehicles, and other equipment	5 - 10	1,188	60
Furniture and fixtures	2 - 5	314	10
Construction in progress		1,076	—
Total property, plant, and equipment, gross		4,809	794
Accumulated depreciation		(707)	(219)
Total property, plant, and equipment, net		\$ 4,102	\$ 575

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8. Accrued expenses and other current liabilities

The following summarizes the balances of accrued expenses and other current liabilities:

<i>\$ in thousands</i>	Years Ended December 31,	
	2021	2020
Payroll and other employee benefits	\$ 862	\$ 155
Professional fees	1,379	108
Research and development costs	1,895	—
Operating lease liabilities, current portion	2,240	209
Other accrued expenses	598	53
Total accrued expenses and other current liabilities	\$ 6,974	\$ 525

9. Income Taxes

The domestic and foreign components of pre-tax income are as follows:

<i>\$ in thousands</i>	Years Ended December 31,	
	2021 (As Restated)	2020
Domestic	\$ (136,753)	\$ (7,437)
Foreign	(653)	—
Total loss before tax	\$ (137,406)	\$ (7,437)

For the year ended December 31, 2021, the Company recorded state tax expense of \$2 thousand with no amounts recorded for federal or foreign taxes. No income tax expense or benefit was recorded for the year ended December 31, 2020. The effective tax rate of the provision for income tax differs from the federal statutory rate as follows for the periods indicated:

<i>\$ in thousands</i>	Years Ended December 31,			
	2021 (As Restated)		2020	
U.S. federal statutory income tax rate	\$ (28,855)	21.0%	\$ (1,562)	21.0%
State taxes, net of federal benefit	(3,590)	2.6%	(75)	1.0%
SAFE instruments remeasurement	18,250	(13.3)%	—	—%
Warrant liability remeasurement	1,397	(1.0)%	—	—%
Transaction costs	(1,531)	1.1%	—	—%
Valuation allowance	14,531	(10.6)%	1,770	(23.8)%
Other	(200)	0.2%	(133)	1.8%
Income tax expense	\$ 2	—%	\$ —	—%

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Deferred income taxes reflect the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes. A valuation allowance is established when necessary to reduce deferred tax assets to the amounts more likely than not to be realized. The components of the deferred tax assets are as follows for the periods indicated

<i>\$ in thousands</i>	Years Ended December 31,	
	2021	2020
Deferred tax assets:		
Net operating loss carryforwards	\$ 19,816	\$ 5,605
Stock compensation	1,705	158
Operating lease liability	4,896	171
Other	1,619	606
Gross deferred tax assets	28,036	6,540
Less: Valuation allowance	(21,238)	(6,258)
Net deferred tax assets	6,798	282
Deferred tax liabilities:		
Depreciation and amortization	(887)	(111)
Right of use asset	(4,824)	(171)
Other	(1,087)	—
Net deferred income taxes	\$ —	\$ —

In assessing the realizability of deferred tax assets, we consider whether it is more likely than not that some portion or all of the deferred tax assets will not be realized. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income during the periods in which those temporary differences become deductible. Based upon the analysis of federal and state deferred tax balances, future tax projections and availability of taxable income in the carryback period, the Company recorded a valuation allowance against the federal and state deferred tax assets of \$21.2 million.

As of December 31, 2021, the Company has federal net operating losses of \$74.2 million, state net operating losses of \$48.3 million and foreign net operating losses of \$0.3 million. The federal and state net operating losses will expire starting with 2033. As of December 31, 2020, the Company had federal net operating losses of \$5.9 million and state net operating losses of \$1.9 million, which will expire starting in 2033.

At December 31, 2021, the Company had federal research tax credit carryforwards of \$57 thousand. The Company had no state research tax credit carryforwards.

At December 31, 2021, and 2020, the Company recorded unrecognized tax benefits of \$57 thousand for both periods. During the years ended December 31, 2021 and 2020, the Company recognized no interest and penalties related to uncertain tax positions. The total amount of unrecognized tax benefits that, if recognized, would affect the effective tax rate as of December 31, 2021 and 2020 is zero, due to the valuation allowance that would otherwise be recorded on the deferred tax asset associated with the recognized position.

The tax years ended December 31, 2018 through December 31, 2021 remain open to examination by the Internal Revenue Service and December 31, 2017 through December 31, 2021 remain open to examination by the California Tax Board. In addition, the utilization of net loss carryforwards is subject to federal and state review for the periods in which those net losses were incurred. The Company is not under audit by any taxing jurisdictions at this time.

Utilization of the net operating loss and research tax credit carryforwards are subject to an annual limitation based on changes in ownership, as defined by Section 382 and 383 of the Internal Revenue Code of 1986, as amended.

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Heliogen, Inc. Notes to the Consolidated Financial Statements

10. Share-based Compensation

Legacy Heliogen's 2013 Stock Incentive Plan (the "2013 Plan") aims to incentivize employees, directors and consultants who render services to the Company through the granting of stock awards, including options and RSU Awards.

The Board administers the 2013 Plan, approves the individuals to whom the stock awards will be granted, determines the number of awards to be granted, and the term and vesting pattern of awards, and the exercise price of each option. An aggregate of 20.6 million shares were reserved for issuance under the 2013 Plan. Options granted pursuant to the terms of the 2013 Plan cannot be granted with an exercise price of less than 100% of the fair market value of the underlying stock on the date of grant or 110% for incentive stock options issued to a ten percent or more stockholder of the Company. The term of the options granted under the 2013 Plan cannot be greater than ten years; five years for incentive stock options granted to a ten percent or more stockholder of the Company. Options granted generally vest twenty-five percent on the one-year anniversary of the date of grant with the remaining balance vesting equally on a monthly basis over the subsequent three years. In November 2021, the Company granted options to its Chief Executive Officer and RSU Awards to certain employees (the "November 2021 Awards"). The November 2021 Awards include a service-based requirement and a liquidity event requirement in order to vest. The liquidity event requirement was satisfied by the closing of the Merger on December 30, 2021.

As a result of the Merger, at the Effective Time, the Legacy Heliogen options and RSU Awards that were outstanding immediately prior to the Effective Time were converted by applying the Exchange Ratio (as described in greater detail in Note 1). Except as specifically provided in the Business Combination Agreement, each Exchanged Option and Exchanged RSU Award shall be subject to the same terms and conditions (including applicable vesting, expiration, and forfeiture provisions) that applied to the corresponding Legacy Heliogen option or RSU Award immediately prior to the Effective Time. All stock award activity was retroactively restated to reflect the Exchanged Options and Exchanged RSU Awards.

At the special meeting of Athena's stockholders held on December 28, 2021, the stockholders approved the Heliogen, Inc. 2021 Equity Incentive Plan (the "2021 Plan") and the Heliogen, Inc. 2021 Employee Stock Purchase Plan (the "2021 ESPP"). The 2021 Plan and the 2021 ESPP were previously approved, subject to shareholder approval, by Athena's board of directors on November 10, 2021, and on the Closing Date, the board of directors ratified the approval of the 2021 Plan and the 2021 ESPP, which became effective immediately upon the closing of the Merger on December 30, 2021. The aggregate number of shares of Common Stock authorized for issuance under the 2021 Plan will not exceed 11.9 million shares as of December 31, 2021. In addition, such aggregate number of shares of Common Stock will automatically increase on January 1 of each year for a period of ten years commencing on January 1, 2022 and ending on (and including) January 31, 2031, in an amount equal to 4% of the total number of shares of the Company's Common Stock outstanding on December 31 of the preceding year. The aggregate number of shares of Common Stock that may be issued pursuant to the exercise of incentive stock options under the 2021 Plan is 35.7 million shares (equal to 300% of the total number of shares initially reserved for issuance). The aggregate number of shares of Common Stock reserved for issuance under the 2021 ESPP is 4.8 million, plus the number of shares of Common Stock that are

automatically added on January 1 of each year for a period of up to ten years, commencing on January 1, 2022 and ending on (and including) January 1, 2031, in an amount equal to the lesser of (x) 1% of the total number of shares of Common Stock outstanding on December 31 of the preceding year and (y) 9.5 million shares of Common Stock (equal to 200% of the total number of shares initially reserved for issuance).

The 2021 Plan aims to incentivize employees, directors and consultants who render services to the Company through the granting of stock awards, including options, SARs, restricted stock awards, RSU awards, performance awards, and other stock-based awards. As of December 31, 2021, no awards have been granted under the 2021 Plan.

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Heliogen, Inc.
Notes to the Consolidated Financial Statements

Our total share-based compensation expense, including the location where recognized within our Consolidated Statements of Operations and Comprehensive Loss, are as follows (\$ in thousands):

Operating expense classification	Years ended December 31,	
	2021	2020
Selling, general, and administrative	\$ 10,158	\$ 147
R&D	1,222	131
Total share-based compensation expense	\$ 11,380	\$ 278

During the year ended December 31, 2021, in connection with the termination of two former employees, we modified their outstanding stock options to accelerate the vesting, and for one of the former employees, to extend the exercise period of the options. Additionally, during the year ended December 31, 2021, stock option grants were modified for three former directors. These modifications for former employees and outgoing directors resulted in total incremental expense of \$2.2 million during the year ended December 31, 2021.

As of December 31, 2021, the unrecognized compensation cost related to share-based awards was \$72.7 million and is expected to be recognized over a weighted-average period of 1.66 years.

Options

We value our options using the Black-Scholes option-pricing model, which was developed for use in estimating the fair value of options. Black-Scholes and other option valuation models require the input of highly subjective assumptions, including the fair value of our Common Stock, expected term, expected volatility, risk-free interest rate and expected dividends. We use a simplified method to determine the life of the options. The expected volatility of the options granted was estimated using the historical volatility of the comparable publicly traded companies over the expected term of the options as a substitute for the historical volatility of the Company's common shares, which was not determinable without an active external or internal market prior to the consummation of the Business Combination.

Prior to the Business Combination, the Company's common stock was not publicly traded. As a result, the estimated fair value of our common stock required significant judgment by management, including the valuation methodology used, weighting of potential scenarios, and discount rate. Our common stock was measured at fair value for use in the Black-Scholes option pricing model using a probability-weighted method considering two potential outcomes: a merger with a special purpose acquisition company exit scenario and a stay private scenario. In addition, we applied a discount for lack of marketability, which was estimated using the Black-Scholes option pricing model. The table below summarizes the other valuation assumptions, on a weighted-average basis, used in the Black-Scholes option-pricing model to estimate the fair value of stock option awards:

	Years ended December 31,	
	2021	2020
Expected term (in years)	6.08	5.97
Expected volatility	40.7%	40.9%
Risk-free interest rate	1.2%	0.5%
Expected dividend yield	—	—

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The following table summarizes the Company's stock option activity:

	Number of Shares	Weighted Average Grant Date Fair Value (\$)	Weighted Average Exercise Price (\$)	Weighted Average Remaining Contractual Life (Years)	Aggregate Intrinsic Value (\$)
Outstanding balance as of December 31, 2019	16,161,311	0.10	0.09	8.53	
Granted	14,892,844	0.16	0.18		
Exercised	(113,247)	0.09	0.09		11,813
Forfeited	(188,745)	0.09	0.09		
Outstanding balance as of December 31, 2020	30,752,163	0.13	0.13	8.65	2,061,436
Granted	17,582,483	2.34	5.42		
Exercised	(5,741,547)	0.07	0.11		15,598,547
Forfeited	(1,736,001)	0.24	0.21		
Expired	(28,940)	0.37	0.22		
Outstanding balance as of December 31, 2021	40,828,158	1.10	2.41	8.41	535,438,090
Exercisable as of December 31, 2021	15,551,698	0.13	0.13	7.04	239,383,717

Vested as of December 31, 2021 14,243,064 0.06 0.11 6.85 219,457,217

RSU Awards

The fair value of RSU Awards is measured at the fair value of the Company’s Common Stock on the grant date, which we estimated using a discounted cash flow approach based on the expected value for the Company as a result of the Business Combination, which was considered likely as of the valuation date in November 2021. The discount rate was based on a venture capital rate of return and the Company’s mezzanine stage of development. In addition, we applied a discount for lack of marketability, which was estimated using the Black-Scholes option pricing model.

The table below summarizes the key inputs used in the valuation of the RSU Awards granted in November 2021:

Expected time to transaction (in years)	0.09
Discount rate	20%
Expected volatility	50%
Risk-free interest rate	0.1%
Expected dividend yield	—%

The following table summarizes the Company’s RSU Award activity:

	Number of Shares	Weighted Average Grant Date Fair Value (\$)
Unvested RSA Awards as of December 31, 2020	—	\$ —
Granted	4,440,067	\$ 9.00
Unvested RSA Awards as of December 31, 2021	4,440,067	\$ 9.00

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Heliogen, Inc.
Notes to the Consolidated Financial Statements

11. Losses Per Share

Basic and diluted losses per share (“EPS”) were as follows (\$ in thousands):

	Years ended December 31,	
	2021 (As Restated)	2020
Numerator		
Net loss	\$ (137,408)	\$ (7,437)
Denominator		
Denominator for basic EPS – weighted-average shares	11,970,550	7,978,512
Effect of dilutive securities		
Denominator for diluted EPS – weighted-average shares	11,970,550	7,978,512
EPS – Basic and Diluted	\$ (11.48)	\$ (0.93)

As of December 31, 2021 and 2020, 40,828,158 and 30,752,163 outstanding stock options, respectively, were excluded from the calculation of EPS, as their impact would be anti-dilutive. Additionally, as of December 31, 2021, 4,440,067 restricted stock units and 481,301 restricted shares issued upon the early exercise of unvested options have been excluded from the calculation of EPS, as their impact would be anti-dilutive.

As of December 31, 2021, 8,566,666 outstanding common stock warrants and were excluded from the calculation of EPS, as their impact would be anti-dilutive. As of December 31, 2020, outstanding preferred stock warrants were excluded from the calculation of EPS, as their impact, which would be equivalent to 381,306 shares of common stock on an “as converted” basis, would be anti-dilutive.

As of December 31, 2020, 117,886,982 outstanding convertible preferred shares were excluded from the calculation of EPS, as their impact, which would be equivalent to 121,038,967 shares of common stock on an “as converted” basis, would be anti-dilutive.

12. Related Party Transactions

Idealab

The Chief Executive Officer of our Company also serves as the chairman of the board of directors of Idealab. Idealab, a minority owner of Heliogen’s outstanding voting stock through its wholly owned subsidiary, Idealab Holdings, provides various services through service agreements which include leasing office space, accounting, human resources, legal, information technology, marketing, public relations, and certain other executive services. On occasion, Idealab may pay for certain expenses on our behalf, for which we reimburse Idealab. These expenses, include parking, postage, tax return preparation fees, patent fees, corporate filing fees, press release cost and are not considered related party. No such expenses were paid on our behalf nor reimbursements made for the year ended December 31, 2021. All expenses or amounts paid to Idealab pursuant to these agreements are reported within selling, general, and administrative in the Consolidated Statements of Operations and Comprehensive Loss.

In May 2021, Heliogen sub-leased a portion of its office space in Pasadena, CA to Idealab for a term of seven years. Refer to Note 13 – Leases for further discussion of our new Pasadena, CA office space lease. The sub-lease has an initial annual base rent of approximately \$150,000 and contains a 3% per annum escalation clause. The sub-lease is subject to termination by either party upon six months prior written notice. Concurrently with the parties’ entering into the sub-lease agreement, Idealab and Heliogen also entered into certain property management and shared facilities staffing agreements, which provide that Heliogen pays Idealab approximately \$3,000 per month for building management services and approximately \$13,000 per month for shared facilities staff and services (with proportional reimbursement of salaries). Such agreements are subject to termination right by either party with 90 days’ prior written notice. For the year ended December 31, 2021, we recognized \$85 thousand in rental revenue reported within other income (expense), net in our Consolidated Statements of Operations and Comprehensive Loss.

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The amounts charged to us or reimbursed by us under these agreements were as follows (\$ in thousands):

	Years ended December 31,	
	2021	2020
Administrative services provided by Idealab	\$ 1,334	\$ 536
Reimbursement to Idealab for expenses incurred	—	281
Total Idealab transactions	\$ 1,334	\$ 817

13. Leases

The Company enters into lease arrangements, primarily for real estate, all of which are classified as operating leases. There are no material residual value guarantees.

Pasadena, CA Lease. On May 23, 2021, we executed a seven-year lease for office space in Pasadena, California (the "Pasadena Office Lease"). The Pasadena Office Lease includes a termination option under which the Company can terminate the lease for any reason and at no cost, with proper notice, at any time effective on or after May 31, 2026. A portion of the office space subject to the Pasadena Office Lease is being subleased to Idealab. Refer to Note 12 for further discussion of the Idealab sublease.

Long Beach Lease. Effective July 27, 2021, we executed a five-year lease for manufacturing space in Long Beach, California (the "Long Beach Lease"). The Long Beach Lease includes an option for the Company to renew for an additional five years, which we anticipate utilizing. As security for the Company's faithful performance of its obligations under the Long Beach Lease, a commercial bank issued an unconditional and irrevocable \$1.5 million standby letter of credit payable to the lessor, which may be reduced after three years to \$1.0 million if certain conditions are met. The standby letter of credit is valid until cancelled or matured. The terms of the letter of credit are automatically extended for a term of one year at a time unless 60 days prior to the then current expiration date, the commercial bank sends the Company a notice that the letter of credit will not be extended. The Company intends to renew the standby letter of credit through the initial lease term at which point this standby letter of credit will not be extended beyond November 30, 2026. No amounts have been drawn under the standby letter of credit.

The right-of-use assets and liabilities included in our Consolidated Balances Sheets are as follows:

<i>\$ in thousands</i>	December 31,	
	2021	2020
Operating lease right-of-use assets	\$ 16,093	\$ 612
Operating lease liabilities, current	2,240	209
Operating lease liabilities, non-current	14,183	403

The components of lease costs were as follows:

<i>\$ in thousands</i>	Years ended December 31,	
	2021	2020
Operating lease cost	\$ 1,294	\$ 230
Sublease income	(85)	—
Total lease cost	\$ 1,209	\$ 230

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The following is a maturity analysis of the future undiscounted cash flows associated with our operating lease liabilities:

<i>\$ in thousands</i>	Year Ended December 31,
2022	\$ 2,390
2023	2,641
2024	2,546
2025	2,624
2026	2,630
Thereafter	9,810
Total future lease payments	\$ 22,641
Less: Imputed interest	(6,218)
Present value of future lease payments	\$ 16,423

The weighted-average remaining lease terms and discount rates for the Company's operating leases were as follows:

	December 31,	
	2021	2020
Weighted-average remaining lease term (years)	8.7	2.7
Weighted-average discount rate	6.9%	6.0%

14. Commitments and Contingencies

We are involved in various claims and lawsuits arising in the normal course of business, including proceedings involving tort and other general liability claims, and other miscellaneous claims. We recognize a liability when we believe the loss is probable and reasonably estimable. We currently believe that the ultimate outcome of such lawsuits and proceedings will not, individually or in the aggregate, have a material effect on our consolidated financial statements as of and for the year ended December 31,

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

In August 2021, the Company reached settlement with a former employee related to certain matters. The settlement included a cash payment of \$0.1 million and a modification, as defined under U.S. GAAP, to the former employee's stock options resulting in additional stock-based compensation expense of \$1.1 million.

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On August 30, 2021, the Company's predecessor, Athena, received a litigation demand letter (the "Class Vote Demand") on behalf of Athena's stockholder FWD LKNG GDD Irrevocable Trust. The Demand alleged that Athena violated Section 242(b)(2) of the Delaware General Corporation Law by not requiring separate class votes for holders of the Athena Class A and Class B Common Stock in connection with certain aspects of the business combination between Athena and Heliogen. According to the Class Vote Demand, a class vote was required under Section 242(b)(2) because consideration to the stockholders of Heliogen was to be paid in newly issued Common Stock, following elimination of the Class B Common Stock. While such separate class vote is not required pursuant to Section 242(b)(2) of the DGCL, the Company concluded that such separate class vote was advisable to prevent disruption to the proposed transaction with Heliogen, and to avoid the delay and expense of potential litigation and amended its Form S-4 Registration Statement to reflect that change. On January 20, 2022, the stockholders' counsel asserted entitlement to an award of attorneys' fees to reflect the benefit it purportedly obtained for all Athena stockholders. This matter was resolved in March 2022 with no material impact to our financial condition or results of operations.

15. Fair Value of Financial Instruments

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

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

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

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

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

Description	Level	December 31,	
		2021	2020
Assets:			
Investments	1	\$ 32,332	\$ —
Liabilities:			
Public Warrants	1	\$ 14,167	\$ —
Private Warrants	2	396	—
Legacy Heliogen preferred stock warrants	3	—	46

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The following table summarizes the reconciliation of our level 3 fair value measurements (\$ in millions):

Instrument	December 31, 2020	Issuances ⁽¹⁾	Losses ⁽²⁾	Conversion ⁽³⁾	December 31, 2021
SAFE Instruments	\$ —	83,411	86,907	(170,318)	\$ —
Legacy Heliogen preferred stock warrants	\$ 46	—	2,965	(3,011)	\$ —

(1) Net of issuance costs.

(2) The losses for the changes in the fair value of the SAFE Instruments and preferred stock warrants are reported in our Consolidated Statements of Operations and Comprehensive Loss in the line items SAFE Instrument remeasurement and warrant remeasurement, respectively.

(3) On December 30, 2021, immediately prior to the Merger closing, the SAFE Instruments and preferred stock warrants were converted into 20,080,464 shares of common stock and 354,738 shares of common stock, respectively.

The fair value of the Public Warrants, which are publicly-traded, and is determined based on the closing price on the measurement date. Management has concluded that the fair value of the Private Warrants approximates the fair value of the Public Warrants due to the existence similar redemption provisions. Pursuant to the Warrant Agreement, all Warrants are subject to a similar provision that allows the Company to redeem the Warrants if the price of the Company's common stock equals or exceeds \$10.00. As a result, the Company has determined that the fair value of the Private Warrants at a specific date would be similar to that of the Public Warrants, and thus is also determined by using the closing price of the Public Warrants, which was \$1.70 as of December 31, 2021.

The SAFE Instruments and Legacy Heliogen preferred stock warrants were initially measured at fair value using a probability-weighted method considering two potential outcomes: a merger with a special purpose acquisition company exit scenario and a stay private scenario. On December 30, 2021, immediately prior to their conversion, the SAFE Instruments and Legacy Heliogen preferred stock warrants were remeasured at fair value utilizing the income approach based on the Merger occurring

on the valuation date. In addition, we applied a discount for lack of marketability, which was estimated using the Black-Scholes option pricing model.

The table below summarizes key inputs used in the valuation for the SAFE Instruments and Legacy Heliogen preferred stock warrants at their time of conversion on December 30, 2021:

Expected volatility	50.0%
Risk-free interest rate	0.1%
Dividend yield	—

16. Investments

Investments in fixed maturity securities with original maturities of ninety-one to 365 days are classified as available-for-sale as of December 31, 2021, and are shown below (\$ in thousands):

Investment type	Amortized Cost	Unrealized Losses	Fair Value
Corporate bonds	\$ 32,349	\$ (17)	\$ 32,332
Total	\$ 32,349	\$ (17)	\$ 32,332

There were no credit losses recognized for the year ended December 31, 2021 and no allowance for credit losses as of December 31, 2021. There were no realized gains or losses on investments during the year ended December 31, 2021.

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17. Supplemental Cash Flow Information

Cash flows related to interest and leases and non-cash investing and financing activities were as follows (\$ in thousands):

	Years ended December 31,	
	2021	2020
<i>Supplemental disclosures:</i>		
Cash paid for interest	\$ 4	\$ —
Cash paid for amounts included in the measurement of operating lease liabilities	1,152	134
<i>Non-cash investing and financing activities:</i>		
Right-of-use assets obtained in exchange for new operating lease liabilities	\$ 16,757	\$ 601
Warrants assumed as part of Business Combination	10,880	—
Fair value of contingent consideration for HelioHeat Acquisition	2,009	—
Transaction costs incurred but not yet paid	1,474	—
Net working capital assumed as part of Business Combination	1,153	—
Capital expenditures incurred but not yet paid	429	25
Non-cash settlement of note receivable	45	—

The following reconciles cash, cash equivalents and restricted cash (\$ in thousands):

	December 31,	
	2021	2020
Reconciliation of cash, cash equivalents and restricted cash		
Cash and cash equivalents	\$ 190,081	\$ 18,334
Restricted cash	1,500	—
Total cash, cash equivalents and restricted cash	\$ 191,581	\$ 18,334

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

None.

Item 9A. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

We maintain “disclosure controls and procedures,” as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended, or the Exchange Act, that are designed to ensure that information required to be disclosed in the reports that we file or submit under the Exchange Act is (1) recorded, processed, summarized and reported, within the time periods specified in the SEC’s rules and forms and (2) accumulated and communicated to our management, including our principal executive officer and principal financial officer, to allow timely decisions regarding required disclosure.

Management’s Report on Internal Control over Financial Reporting

As discussed elsewhere in this Annual Report on Form 10-K, we completed the Business Combination on December 30, 2021. Prior to the closing of the Business Combination, we were a special purpose acquisition company formed for the purpose of effecting a merger, capital stock exchange, asset acquisition, stock purchase, reorganization or other similar business combination with one or more operating businesses. As a result of the Business Combination, previously existing internal controls are no longer applicable or comprehensive enough as of the assessment date as our operations prior to the Business Combination were insignificant compared to those of the post-

combination Company. The design of internal control over financial reporting for the post-combination Company has required and will continue to require significant time and resources from management and other personnel. As a result, management was unable, without incurring unreasonable effort or expense to conduct an assessment of our internal control over financial reporting as of December 31, 2021. Accordingly, we are excluding management's report on internal control over financial reporting in accordance with Section 215.02 of the SEC Division of Corporation Finance's Regulation S-K Compliance & Disclosure Interpretations.

Although management did not conduct a formal assessment of internal control over financial reporting, in connection with the preparation and audit of our financial statements as of and for the fiscal year ended December 31, 2020, we identified material weaknesses, as described below, in our internal control over financial reporting, which is an integral component of our disclosure controls and procedures.

A material weakness is a deficiency, or a combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of our annual or interim financial statements will not be prevented or detected on a timely basis. If we are unable to remediate these material weaknesses, or if we identify additional material weaknesses in the future or otherwise fail to maintain an effective system of internal controls, we may not be able to accurately or timely report our financial condition or results of operations, which may adversely affect investor confidence in us and, as a result, our stock price.

The material weaknesses are as follows:

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

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Additionally, subsequent to filing our Annual Report on Form 10-K, management concluded that the DOE Award represented a government grant and was not within the scope of ASC 606. As such, amounts recorded in relation to the DOE Award as of and for the year ended December 31, 2021 were restated as presented elsewhere in this revised Annual Report on Form 10-K/A. Management concluded this restatement resulted from the same material weakness previously relating to effective review of technical accounting matters.

We are currently taking actions to remediate the deficiencies in our internal control over financial reporting and are implementing additional processes and controls designed to address the underlying causes associated with the above-mentioned deficiencies. We are committed to remediating the deficiencies described above and commenced remediation efforts during 2021 that will continue into fiscal year 2022. Our efforts to implement measures designed to improve our internal control over financial reporting to remediate these deficiencies include the following steps taken in 2021:

- We added additional accounting resources, including a Chief Accounting Officer and head of SEC Reporting, who have the requisite background and knowledge in the application of U.S. GAAP and SEC rules and regulations.
- We engaged external experts to complement internal resources and to provide support related to more complex applications of U.S. GAAP, tax and internal controls. We will continue to utilize outside resources, as necessary, to supplement our internal team.
- We began the implementation of a new company-wide enterprise resource planning system. On October 1, 2021, we transitioned to our new enterprise resource planning system with improved information technology general controls (ITGCs), including segregated review and approval of journal entries. For 2022 and beyond, we have continued and will continue to implement incremental components of the enterprise resource planning system and other applications.
- We developed and improved recurring accounting processes providing more timely and detailed review of complex and routine areas.
- We formalized documentation of certain policies throughout the year.
- We enhanced our process in accounting for, and documenting our positions related to, complex accounting topics throughout the year, including, but not limited to, new controls in the areas of management review, segregation of duties, journal entry approval, and documentation and review of complex accounting matters.

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

Although the Company has made significant progress in remediating the aforementioned deficiencies as outlined above, the material weaknesses continued to exist as of December 31, 2021 due to identification of adjustments during the year ended December 31, 2021.

With the foregoing in mind, our management, with the participation of our Chief Executive Officer and Chief Financial Officer, evaluated the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act), as of the end of the period covered by this Annual Report on Form 10-K/A. Based on such evaluation, our Chief Executive Officer and Chief Financial Officer have concluded that as of December 31, 2021, our disclosure controls and procedures were not effective at a reasonable assurance level as a result of the material weakness that existed in our internal control over financial reporting identified previously, which continue to exist as of December 31, 2021 as discussed above. Notwithstanding the existence of the material weaknesses described above, management believe that the consolidated financial statements in this Annual Report on Form 10-K/A fairly present, in all material respects, the Company's financial position, results of operations and cash flows for all periods and dates presented in accordance with United States generally accepted accounting principles.

This Annual Report on Form 10-K/A does not include an attestation report of our registered public accounting firm due to an exemption for "emerging growth companies."

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Changes in Internal Control over Financial Reporting

Other than in connection with executing upon the implementation of the remediation measures described above and the changes to our internal control over financial reporting, there were no significant changes in our internal control over financial reporting identified in connection with the evaluation required by Rule 13a-15(d) and 15d-

15(d) of the Exchange Act that occurred during the quarter ended December 31, 2021 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

Limitations on Effectiveness of Controls and Procedures

Management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures.

Item 9B. Other Information

On March 28, 2022, Heliogen entered into a series of commercial agreements (collectively, the "Agreements") with Woodside Energy (USA) Inc. ("Woodside"), a wholly-owned subsidiary of leading Australian energy producer Woodside Petroleum Ltd. for the commercial-scale demonstration and deployment of Heliogen's AI-enabled concentrated solar energy technology in California and the marketing of Heliogen's technology in Australia.

Project Agreement

Under the commercial-scale demonstration agreement (the "Project Agreement"), Heliogen and Woodside have agreed to complete the engineering, procurement, and construction of a new 5 MWe concentrated solar energy facility (the "Facility") to be built in Mojave, California for testing, research and development. The Facility is expected to serve as basis for developing larger scale power generation facilities to be developed, engineered, procured and constructed under separate agreements between the parties. Pursuant to the Project Agreement, Woodside has pledged up to \$50 million to complete the Facility. In addition, Heliogen will apply its previously announced \$39 million award from the U.S. Department of Energy to deploy and test an innovative approach to converting the thermal energy produced by Heliogen's facility into power. Once the Facility is completed and all other requirements of the DOE Award are met, ownership of the Facility will be transferred to Woodside.

Collaboration Agreement

In addition to the Project Agreement, Heliogen and Woodside have also signed a collaboration agreement to jointly market Heliogen's technology in Australia (the "Australia Collaboration Agreement"), which includes an objective to deploy further commercial-scale modules of Heliogen's HeliHeat, HeliPower, and HeliFuel offerings. Under this arrangement, the parties expect to define product offerings that use Heliogen's modular technology for potential customers (including Woodside) in Australia and are establishing a roadmap to identify and engage with those customers. Under the Australia Collaboration Agreement, Woodside received the exclusive right for a period of 18 months (the "Exclusivity Period") following construction of Heliogen's facility under the Project Agreement to jointly market Heliogen's base concentrated solar technology (i.e., tower, receiver and Heliostat field) in Australia and concurrently agreed to refrain from marketing any similar concentrated solar technology for any other company for the duration of the Exclusivity Period, which period may be extended for up to an additional three years dependent upon whether Woodside meets certain performance targets. Each of the parties will retain their respective rights to their background intellectual property but have granted each other a limited mutual license of intellectual property as needed to effect the Australia Collaboration Agreement. Heliogen and Woodside additionally agreed to negotiate the terms of a full marketing agreement within the next eighteen months, including compensation payable to Woodside for projects Heliogen deploys in Australia.

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Warrant Agreements

In connection with the execution of each of the Project Agreement and the Australia Collaboration Agreement, Heliogen and Woodside entered into two corresponding warrant agreements (the "Warrant Agreements") pursuant to which Heliogen issued warrants (the "Warrants") permitting Woodside to purchase in the aggregate approximately 4.56 million shares of our Common Stock (the "Warrant Shares") at an exercise price of \$0.01 per share. Pursuant to the first Warrant Agreement, approximately 0.9 million Warrants will vest pro rata with certain payments required to be made by Woodside under the Project Agreement. Pursuant to the second Warrant Agreement, Warrants to purchase approximately 1.8 million Warrant Shares vested immediately upon execution of the Collaboration Agreement and approximately 1.8 million Warrants will vest based on Woodside reaching specified performance goals relating to towers contracted under the Collaboration Agreement (or under a separate collaboration the parties intend to enter into after the issue date). Transfer of the Warrants and the Warrant Shares will be subject to Heliogen's approval for a period of one year following the issue date. The Warrants expire upon the earlier of (i) a change in control of Heliogen, or (ii) March 28, 2027 (five years following the date of the Warrant Agreements). The issuance of the Warrants and the underlying Warrant Shares were not registered under the Securities Act. The Warrants and the underlying Warrant Shares were issued in a private placement exempt from the registration requirements of the Securities Act, in reliance on the exemptions set forth in Section 4(a)(2) of the Securities Act.

The foregoing description of the material terms of the Agreements does not purport to be complete and is qualified in its entirety by reference to the Agreements, which will be filed with the Securities and Exchange Commission as an exhibit to the Company's Quarterly Report on Form 10-Q for the fiscal quarter ended March 31, 2022.

Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections

Not applicable.

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Part III

Item 10. Directors, Executive Officers and Corporate Governance

Executive Officers and Directors

The following table sets forth the name, age and position of each of the directors and executive officers of Heliogen as of December 31, 2021:

Name	Age	Position
Executive Officers		
Bill Gross	63	Chief Executive Officer; Director
Christiana Obiaya	38	Chief Financial Officer
Steven Schell	42	Chief Technology Officer and Chief Engineer
Thomas Doyle	59	Chief Commercial Officer
Non-Employee Directors		

Phyllis W. Newhouse ⁽²⁾	58	Director
Stacey Abrams ⁽³⁾	47	Director
Suntharesan Padmanathan ⁽²⁾	63	Director
Julie Kane ⁽¹⁾⁽³⁾	63	Director
Robert Kavner ⁽¹⁾⁽³⁾	78	Director
David Crane ⁽¹⁾⁽²⁾	62	Director

(1) Member of the Heliogen audit committee.

(2) Member of the Heliogen compensation and human capital committee.

(3) Member of the Heliogen nominating and corporate governance committee.

Executive Officers

Bill Gross. Mr. Gross has been Heliogen’s Chief Executive Officer and chairman of the Board since December 2021. Previously, Mr. Gross served as Chief Executive Officer of Legacy Heliogen since January 2016 and was also Chief Executive Officer from May 2013 to January 2015. Mr. Gross was also a director of Legacy Heliogen April 2013 to December 2021 and served as chairman of the board of directors from January 2015 to December 2021. Mr. Gross has also served as Chief Executive Officer and the chairman of the board of directors of Idealab Studio, LLC since January 1, 2018. Mr. Gross previously served as Chief Executive Officer of Idealab, a technology incubator he founded, from February 1996 to December 31, 2017. Mr. Gross has more than 40 years of experience in conceiving and starting new technology companies, including GoTo.com/Overture.com, Energy Vault, Inc., Carbon Capture, Inc., and CarsDirect.com/Internet Brands, Inc. Mr. Gross serves on the boards of directors of numerous companies and is also a member of the Board of Trustees of Caltech and the Art Center College of Design. He holds a B.S. from the California Institute of Technology. We believe Mr. Gross is qualified to serve on our Board because of the perspective and experience he brings as our Chief Executive Officer, as well as his substantial business, leadership and management experience. As our Chief Executive Officer Mr. Gross also provides management’s perspective in Board discussions regarding the business and strategic direction of the Company.

Christiana Obiaya. Ms. Obiaya has been Heliogen’s Chief Financial Officer since December 2021. Previously Ms. Obiaya served as Chief Financial Officer at Legacy Heliogen since March 2021. Prior to joining Legacy Heliogen, Ms. Obiaya held roles as Chief Financial Officer and head of strategy for Bechtel Energy (“Bechtel”) from 2017 to 2021 as well as various other leadership roles spanning finance, strategy, project development and investment, and project execution from 2010 to 2017. Prior to Bechtel, Ms. Obiaya worked on renewable energy projects in Kenya and India from 2008 to 2009. Ms. Obiaya began her career as an engineer, designing products and scaling up manufacturing processes at a multinational consumer goods company from 2004 to 2008. Ms. Obiaya graduated from MIT with a B.S. in Chemical Engineering and an MBA from MIT Sloan School of Management.

Steven Schell. Mr. Schell has been Heliogen’s Chief Technology Officer and Chief Engineer at Heliogen since December 2021. Previously, Mr. Schell served as Legacy Heliogen’s Chief Technology Officer and Chief Engineer since February 2020 and as Vice President of Engineering from February 2018 to February 2020. Prior to joining Legacy Heliogen, Mr. Schell was the Chief Executive Officer and Co-Founder of New Matter from January 2014 to February 2018. Mr. Schell graduated from Caltech with a B.S. in Mechanical Engineering and has spent 20 years in new technology and product development ranging from robotics to 3D printing to solar energy.

Thomas Doyle. Mr. Doyle has been Heliogen’s Chief Commercial Officer since December 2021. Previously, Mr. Doyle served as Legacy Heliogen’s Chief Commercial Officer since from October 2021 to December 2021 and as Co-Head of Project Development from January 2021 to October 2021. Prior to joining Legacy Heliogen, Mr. Doyle served as an Executive Advisor to Morgan Stanley Energy Partners (“MSEP”) from January 2020 to January 2021 and as Chief Executive Officer of Reterro, Inc. from June 2016 to December 2019. Mr. Doyle also held roles as Chief Executive Officer of NRG Renew from October 2009 through January 2016 and EVP of Commercial Execution at Brightsource Energy. Mr. Doyle also serves on the board of directors of one of MSEP’s portfolio companies. Mr. Doyle holds an MBA and a B.S. in Mechanical Engineering from the University of Arizona.

Non-Employee Directors

Phyllis Newhouse. Ms. Newhouse has served as a member of our Board since December 2021. Ms. Newhouse is a serial entrepreneur and investor, retired military senior officer and mentor. Ms. Newhouse is the founder of XtremeSolutions, Inc., an Atlanta-based cybersecurity firm that offers service in both the federal and private sectors (“XSI”). Since founding XSI in June 2002, Ms. Newhouse has served as XSI’s Chief Executive Officer and has led the company in offering a wide range of IT expertise and provides industry leading, state-of-the-art information technology and cybersecurity services and solutions. Ms. Newhouse is also the founder and Chief Executive Officer of ShoulderUp Technology Acquisition Corp., a blank check company which completed its initial public offering in November 2021. Prior to founding XSI, Ms. Newhouse served as a member of the United States Army for more than 22 years, where she focused on national security issues and helped to establish the Cyber Espionage Task Force. Ms. Newhouse currently serves on the board of directors of Sabre GLOB Inc. (NASDAQ: SABR), as well as for the Technology Association of Georgia and Business Executives for National Security. Ms. Newhouse is also the founder of ShoulderUp, a nonprofit organization dedicated to connecting and supporting women on their entrepreneurial journeys. Additionally, Ms. Newhouse serves on the executive board and is a member of the Women President Organization and serves on the board of Girls Inc., a nonprofit organization that encourages all girls to be “Strong, Smart, and Bold.” Ms. Newhouse is known as a pioneer in cybersecurity. She has received numerous awards as an industry thought leader. In 2017, Ms. Newhouse became the first woman to win an Ernst & Young (“EY”) Entrepreneur of The Year award in the technology category. She was admitted into the 2013 class of EY Entrepreneurial Winning Women, and in 2019 was inducted into the Enterprising Women hall of fame. Ms. Newhouse received her B.A. in Liberal Arts Science from Saint Leo College. We believe Ms. Newhouse is qualified to serve on our Board because of her significant knowledge of the cybersecurity and IT industries and experience as a director of publicly and privately-held companies.

Stacey Abrams. Ms. Abrams has served as a member of our Board since December 2021. Ms. Abrams has served as the Chief Executive Officer of Sage Works Production, Inc. since 2020. She co-founded Insomnia Consulting in 2006 to specialize in development, investment and consulting for complex infrastructure projects, including transportation, waste-by-rail transfer, energy, facilities and water. In addition, Ms. Abrams founded and served as executive director of the Southern Economic Advancement Project from March 2019 until December 2021. From 2007 to 2017, Ms. Abrams served as a State Representative of the Georgia General Assembly and as the minority leader from 2011 to 2017. She has been the chief executive officer of Sage Works, LLC since September 2002. She previously served as the chief executive officer of the Third Sector Development from August 1998 until March 2019. Ms. Abrams previously also co-founded and served as Senior Vice President of NOWaccount Network Corporation from 2010 to 2016. Ms. Abrams currently serves on the boards of directors of a number of organizations, including ShoulderUp Technology Acquisition Corp., the National Democratic Institute for International Affairs and the Marguerite Casey Foundation. Ms. Abrams has a strong record on climate change, environmental justice and climate action. She has served on the advisory boards of World War Zero (founded by former Secretary of State John Kerry) and Climate Power 2020 (founded by John Podesta). Ms. Abrams received a B.A. in Interdisciplinary Studies from Spelman College, a Master of Public Affairs from the University of Texas Lyndon B. Johnson School of Public Affairs, and a J.D. from Yale University. We believe Ms. Abrams is qualified to serve on our Board because of her expertise in environmental justice and climate action and her leadership experience in both government and the private sector.

Suntharesan Padmanathan. Mr. Padmanathan has served as a member of our Board since December 2021. Mr. Padmanathan is a seasoned engineering and energy expert with over 40 years of industry experience. Since January 2022 he has been the Vice Chairman and Chief Executive Officer of ACWA Power, having, in his prior roles as Head of Business Development from 2005 to 2007 and then as President & Chief Executive Officer from 2007 to January 2022, spearheaded its expansion from a startup in 2006 to a leading private developer, owner and operator of power generation and desalinated water production plants today including its emergence as the largest developer and owner of concentrated solar power with molten salt storage technology in the world. Prior to joining ACWA Power, Mr. Padmanathan was Vice President and Corporate Officer at Black and Veatch, where he was responsible for developing privately financed power, water and wastewater projects in over a dozen countries. Before that, Mr. Padmanathan was the Chief Executive of Black & Veatch Africa Limited and an Executive Director of Burrow Binnie International Ltd. Mr. Padmanathan began his career as an engineer at John Burrow and Partners Overseas. In addition to Mr. Padmanathan's executive responsibilities at ACWA Power, he also serves as vice-chairman of its board of directors and as a member of the board of directors of several companies involved in power and water development across the globe, including BESIX, XLink Ltd and Desolenator BV. Mr. Padmanathan holds a degree in Engineering from the University of Manchester, United Kingdom. We believe Mr. Padmanathan is qualified to serve on our Board because of his significant knowledge of the renewable energy industry and his experience as an executive officer and member of the boards of directors of several companies involved in power and water development across the globe.

Julie Kane. Ms. Kane has served as a member of our Board since December 2021. Ms. Kane has also served as a director of SIGA Technologies, Inc. ("SIGA") since May 2019. She currently chairs SIGA's Compensation Committee and formerly chaired SIGA's Nominations and Corporate Governance Committee. She is currently an independent consultant in the aviation industry. Ms. Kane is the former Senior Vice President, Chief Ethics and Compliance Officer, and Deputy General Counsel of PG&E Corporation (2015-2020). Prior to joining PG&E Corporation in 2015, Ms. Kane worked at Avon Products, Incorporated as Vice President and General Counsel of Avon North America and Corporate Legal Functions. Prior to joining Avon in 2013, Ms. Kane held a number of senior roles with Novartis Corporation and its affiliates over a 25-year period. Ms. Kane is a member of the board of directors of the Ethics Resource Center in Washington, D.C., and formerly served on the Board of Governors of the Commonwealth Club of California. Ms. Kane holds a B.A. in political science from Williams College and J.D. from the University of San Francisco School of Law. Ms. Kane is a member of the California state bar. Ms. Kane's decades of experience spanning several industries, including pharmaceuticals, chemicals and agribusiness, beauty, direct-selling and dual-fuel utilities, along with her experience in environmental, social and governance matters, provides our Board with valuable insight into many aspects of our business. We believe Ms. Kane is qualified to serve on our Board because her decades of experience spanning several industries, including pharmaceuticals, chemicals and agribusiness, beauty, direct-selling and dual-fuel utilities, along with her experience in environmental, social and governance matters, provides our Board with valuable insight into many aspects of our business.

Robert Kavner. Mr. Kavner has served as a member of our Board since December 2021. Since 1995, Mr. Kavner has been an independent venture capital investor focusing on investments in technology companies. From January 1996 through December 1998, Mr. Kavner served as President and Chief Executive Officer of On Command Corporation, a provider of on-demand video systems for the hospitality industry. From 1984 to 1995, Mr. Kavner held several senior management positions at AT&T, including senior vice president, Chief Financial Officer and Chief Executive Officer of Multimedia Products and Services Group and chairman of AT&T Venture Capital Group. Mr. Kavner also served as a member of AT&T's executive committee. Prior to joining AT&T, Mr. Kavner was a partner of PricewaterhouseCoopers. Mr. Kavner currently serves on the boards of directors of a number of privately-held companies, including several early stage companies. He has previously served on the board of directors of a number of public companies, including serving as chairman of Earthlink Networks, CitySearch, Overture, and Pandora Media, and as a member of the boards of Sun Microsystems, Philips Telecommunications, Fleet Bank of Boston, Tandem Computers, and Duracell International. Mr. Kavner received a B.B.A. from Adelphi University and attended the Advanced Management Program at the Amos Tuck School at Dartmouth College. We believe Mr. Kavner is qualified to serve on our Board because of his leadership experience, including his previous service on the boards of directors of a number of public companies, his experience working with a number of variety of technology companies and his expertise in finance and accounting.

David Crane. Mr. Crane has served as a member of our Board since December 2021. Mr. Crane has been the Chief Executive Officer at Climate Real Impact Solutions, a family of climate/sustainability-focused special purpose acquisition corporations, since August 2020. Previously, Mr. Crane was Chief Executive Officer of NRG Energy, Inc. ("NRG") from 2003 to 2015, leading the company from chapter 11 to the Fortune 200. Mr. Crane pioneered the yieldco asset class with the IPO of NRG Yield in July 2013. Mr. Crane also led NRG to the forefront of next-generation clean energy development through large scale initiatives in utility scale renewables (now Clearway), residential solar, post-combustion carbon capture (Petra Nova) and DC fast charging (EVGO). Prior to NRG, Mr. Crane was first Chief Operating Officer and then Chief Executive Officer of International Power Plc, a UK-domiciled FTSE-100 company from 2000 to 2003. During Mr. Crane's tenure, NRG won numerous industry, community and environmental awards. Mr. Crane was named Energy Industry "CEO of the Year" by EnergyBiz in 2010, top Chief Executive Officer in the electric utility sector by Institutional Investor in 2011 and "Entrepreneur of the Year" by Ernst & Young in 2010. Mr. Crane was also awarded the Corporate Environmental Leadership award by GlobalGreen in 2014 and the Equinox Solar Champion Award and The C.K. Prahalad Award for Global Sustainability Business Leadership, both in 2015. Mr. Crane also serves on the boards of directors of the Saudi Electricity Company, the national electricity company of Saudi Arabia, Tata Steel and JERA, a power generation joint venture between Tokyo Electric and Chubu Electric. He also serves on the not-for-profit Boards of Elemental Excelerator, The Climate Group NA, as well as being a B Team Leader, where he chairs the B Team's Net Zero Initiative. Through his public advocacy and his writings, including his seminal 2014 Letter to Shareholders, Mr. Crane has set forth the case for the leading role to be played by the private sector and transformational capitalism more generally in combating climate change, which he calls the "moral imperative of our time". Mr. Crane graduated with an A.B. from Princeton University and a J.D. from Harvard Law School. We believe Mr. Crane is qualified to serve on our Board because of his knowledge of the utility scale renewables industry and his leadership experience as chief executive officer and member of the boards of directors of several energy companies.

Family Relationships

There are no family relationships among any of our directors or executive officers.

Board Composition

Our business and affairs are organized under the direction of the Board. The Board consists of seven members. Bill Gross serves as Chairman of the Board. The primary responsibilities of the Board are to provide oversight, strategic guidance, counseling and direction to management. The Board meets on a regular basis and additionally as required.

In accordance with the terms of the Certificate of Incorporation, the Board is divided into three classes, Class I, Class II and Class III, with only one class of directors being elected in each year and each class serving a three-year term.

- Class I consist of Phyllis W. Newhouse and Suntharesan Padmanathan, whose terms will expire at Heliogen's first annual meeting of stockholders to be held in 2022;
- Class II consist of Stacey Abrams and David Crane, whose terms will expire at Heliogen's second annual meeting of stockholders to be held in 2023; and
- Class III consists of Bill Gross, Robert Kavner and Julie Kane, whose terms will expire at Heliogen's third annual meeting of stockholders to be held in 2024.

At each annual meeting of stockholders to be held after the initial classification, the successors to directors whose terms then expire will be elected to serve from the time of election and qualification until the third annual meeting following their election and until their successors are duly elected and qualified. This classification of the Board may have the effect of delaying or preventing changes in control or management. Our directors may be removed for cause by the affirmative vote of the holders of at

least a majority of our voting stock.

Role of the Board in Risk Oversight

One of the key functions of the Board is informed oversight of our risk management process. The Board does not have a standing risk management committee, but rather administers this oversight function directly through the Board as a whole, as well as through various standing committees of the Board that address risks inherent in their respective areas of oversight. In particular, the Board is responsible for monitoring and assessing strategic risk exposure and our audit committee has the responsibility to consider and discuss our major financial risk exposures and the steps its management take to monitor and control such exposures, including guidelines and policies to govern the process by which risk assessment and management is undertaken. The audit committee also monitors compliance with legal and regulatory requirements. Our compensation and human capital committee assesses and monitors whether our compensation plans, policies and programs comply with applicable legal and regulatory requirements.

Board Committees

The Board established an audit committee, a compensation and human capital committee and a nominating and corporate governance committee. The Board adopted a charter for each of these committees, which complies with the applicable requirements of current NYSE Listing Rules. We intend to comply with future requirements to the extent they will be applicable to us. Copies of the charters for each committee are available on the investor relations portion of our website.

Audit Committee

Our audit committee consists of Robert Kavner, David Crane and Julie Kane. The Board has determined that each of the members of the audit committee satisfy the independence requirements of NYSE and Rule 10A-3 under the Exchange Act. Each member of the audit committee can read and understand fundamental financial statements in accordance with NYSE audit committee requirements. In arriving at this determination, the Board examined each audit committee member's scope of experience and the nature of their prior and/or current employment. Robert Kavner serves as the chair of the audit committee. The Board determined that Robert Kavner qualifies as an audit committee financial expert within the meaning of SEC regulations and meets the financial sophistication requirements of NYSE listing rules. In making this determination, the Board considered Robert Kavner's formal education and previous experience in financial roles. Both our independent registered public accounting firm and management periodically will meet privately with our audit committee.

The functions of this committee include, among other things:

- evaluating the performance, independence and qualifications of our independent auditors and determining whether to retain our existing independent auditors or engage new independent auditors;
- reviewing our financial reporting processes and disclosure controls;
- reviewing and approving the engagement of our independent auditors to perform audit services and any permissible non-audit services;
- reviewing the adequacy and effectiveness of our internal control policies and procedures, including the responsibilities, budget, staffing and effectiveness of our internal audit function;
- reviewing with the independent auditors the annual audit plan, including the scope of audit activities and all critical accounting policies and practices to be used by us;
- obtaining and reviewing at least annually a report by our independent auditors describing the independent auditors' internal quality control procedures and any material issues raised by the most recent internal quality-control review;
- monitoring the rotation of partners of our independent auditors on our engagement team as required by law;
- prior to engagement of any independent auditor, and at least annually thereafter, reviewing relationships that may reasonably be thought to bear on their independence, and assessing and otherwise taking the appropriate action to oversee the independence of our independent auditor;
- reviewing our annual and quarterly financial statements and reports, including the disclosures contained in "Management's Discussion and Analysis of Financial Condition and Results of Operations," and discussing the statements and reports with our independent auditors and management;
- reviewing with our independent auditors and management significant issues that arise regarding accounting principles and financial statement presentation and matters concerning the scope, adequacy and effectiveness of our financial controls and critical accounting policies;
- reviewing with management and our auditors any earnings announcements and other public announcements regarding material developments;
- establishing procedures for the receipt, retention and treatment of complaints received by Heliogen regarding financial controls, accounting, auditing or other matters;
- preparing the report that the SEC requires in our annual proxy statement;
- reviewing and providing oversight of any related party transactions in accordance with our related party transaction policy and reviewing and monitoring compliance with legal and regulatory responsibilities;
- reviewing our major financial risk exposures, including the guidelines and policies to govern the process by which risk assessment and risk management is implemented; and
- reviewing and evaluating on an annual basis the performance of the audit committee and the audit committee charter.

The composition and function of the audit committee comply with all applicable requirements of the Sarbanes-Oxley Act, SEC rules and regulations and NYSE listing rules. We will comply with future requirements to the extent they become applicable to us.

Compensation and Human Capital Committee

Our compensation and human capital committee consists of David Crane, Suntharesan Padmanathan and Phyllis W. Newhouse. David Crane serves as the chair of the compensation and human capital committee. The Board has determined that each of the members of the compensation and human capital committee is a non-employee director, as defined in Rule 16b-3 promulgated under the Exchange Act and satisfy the independence requirements of NYSE. The functions of the committee include, among other things:

- reviewing and approving the corporate objectives that pertain to the determination of executive compensation;
- reviewing and approving the compensation and other terms of employment of Heliogen’s executive officers;
- reviewing and approving performance goals and objectives relevant to the compensation of Heliogen’s executive officers and assessing their performance against these goals and objectives;
- making recommendations to the Board regarding the adoption or amendment of equity and cash incentive plans and approving amendments to such plans to the extent authorized by the Board;
- reviewing and assessing the independence of compensation consultants, legal counsel and other advisors as required by Section 10C of the Exchange Act;
- administering Heliogen’s equity incentive plans, to the extent such authority is delegated by the Board;
- reviewing and approving the terms of any compensation plans, including salary, long-term incentives, bonuses, perquisites, equity incentives, severance arrangements, retirement benefits and other related benefits and benefit plans and any other material arrangements for Heliogen’s executive officers;
- reviewing with management Heliogen’s disclosures under the caption “Compensation Discussion and Analysis” in Heliogen’s periodic reports or proxy statements to be filed with the SEC, to the extent such caption is included in any such report or proxy statement;
- reviewing the human capital management practices related to Heliogen’s talent generally, including how Heliogen recruits, develops, and retains people;
- preparing an annual report on executive compensation that the SEC requires in Heliogen’s annual proxy statement; and
- reviewing and evaluating on an annual basis the performance of the compensation and human capital committee and recommending such changes as deemed necessary with the Board.

The composition and function of our compensation and human capital committee comply with all applicable requirements of the Sarbanes-Oxley Act, SEC rules and regulations and NYSE listing rules. We will comply with future requirements to the extent they become applicable to us.

Nominating and Corporate Governance Committee

Our nominating and corporate governance committee consists of Julie Kane, Stacey Abrams and Robert Kavner. Julie Kane serves as the chair of the nominating and corporate governance committee. The Board has determined that each of the members of Heliogen’s nominating and corporate governance committee satisfy the independence requirements of NYSE. The functions of this committee include, among other things:

- identifying, reviewing and making recommendations of candidates to serve on the Board;
- evaluating the performance of the Board, committees of the Board and individual directors and determining whether continued service on the Board is appropriate;
- evaluating nominations by stockholders of candidates for election to the Board;
- evaluating the current size, composition and organization of the Board and its committees and making recommendations to the Board for approvals;
- developing a set of corporate governance policies and principles and recommending to the Board any changes to such policies and principles;
- reviewing issues and developments related to corporate governance and identifying and bringing to the attention of the Board current and emerging corporate governance trends; and
- reviewing periodically the nominating and corporate governance committee charter, structure and membership requirements and recommending any proposed changes to the Board, including undertaking an annual review of its own performance.

The composition and function of the nominating and corporate governance committee comply with all applicable requirements of the Sarbanes-Oxley Act, SEC rules and regulations and NYSE listing rules. Heliogen will comply with future requirements to the extent they become applicable to Heliogen.

Delinquent Section 16(a) Reports

Section 16(a) of the Exchange Act requires our executive officers, directors and persons who beneficially own more than 10% of our common stock to file with the SEC reports of their ownership and changes in their ownership of our common stock. To our knowledge, based solely on review of the copies of such reports and amendments to such reports with respect to the year ended December 31, 2021 filed with the SEC, all required Section 16 reports under the Exchange Act for our directors, executive officers and beneficial owners of greater than 10% of our common stock were filed on a timely basis during the year ended December 31, 2021 except for a late Form 4 filing relating to the closing of the Business Combination made by each of Ms. Obiaya, Mr. Schell, Mr. Doyle and Ms. Abrams.

Compensation and Human Capital Committee Interlocks and Insider Participation

None of the members of our compensation and human capital committee has ever been one of our executive officers or employees. None of our executive officers currently serve, or has served during the last completed fiscal year, on the compensation and human capital committee or board of directors of any other entity that has one or more executive officers that serve as a member of the Board or compensation and human capital committee.

Limitation on Liability and Indemnification of Directors and Officers

The Certificate of Incorporation eliminates our directors' liability for monetary damages to the fullest extent permitted by applicable law. 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 Heliogen's directors will be eliminated or limited to the fullest extent permitted by the DGCL, as so amended.

The Certificate of Incorporation requires Heliogen to indemnify and advance expenses to, to the fullest extent permitted by applicable law, its directors, officers and agents. Heliogen plans to maintain a directors' and officers' insurance policy pursuant to which Heliogen's directors and officers are insured against liability for actions taken in their capacities as directors and officers. Finally, the Certificate of Incorporation prohibits any retroactive changes to the rights or protections or increase the liability of any director in effect at the time of the alleged occurrence of any act or omission to act giving rise to liability or indemnification.

In addition, Heliogen has entered into separate indemnification agreements with Heliogen's directors and officers. These agreements, among other things, require Heliogen to indemnify its 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 Heliogen's directors or officers or any other company or enterprise to which the person provides services at Heliogen's request.

We believe these provisions in the Certificate of Incorporation are necessary to attract and retain qualified persons as directors and officers.

Code of Business Conduct and Ethics for Employees, Executive Officers and Directors

The Board has adopted a Code of Business Conduct and Ethics (the "Code of Conduct"), applicable to all of Heliogen's employees, executive officers and directors. The Code of Conduct is available on Heliogen's website at www.Heliogen.com. Information contained on or accessible through Heliogen's website is not a part of this Annual Report on Form 10-K, and the inclusion of Heliogen's website address in this Annual Report on Form 10-K is an inactive textual reference only. The nominating and corporate governance committee of the Board is responsible for overseeing the Code of Conduct and must approve any waivers of the Code of Conduct for employees, executive officers and directors. Heliogen expects that any amendments to the Code of Conduct, or any waivers of its requirements granted to executive officers and directors, will be disclosed on its website.

Item 11. Executive Compensation

For the year ended December 31, 2021, Heliogen's named executive officers were:

- Bill Gross — Chief Executive Officer
- Christiana Obiaya — Chief Financial Officer
- Thomas Doyle — Chief Commercial Officer

2021 Summary Compensation Table

The following table shows for the years ended December 31, 2021 and December 31, 2020, compensation awarded or paid to, or earned by, the named executive officers.

	Year	Salary (\$)	Bonus (\$)	Stock Awards (\$) ⁽¹⁾	Option Awards (\$)	All Other Compensation (\$)	Total (\$)
<i>Bill Gross</i> <i>Chief Executive Officer</i>	2021	\$ 266,886 ⁽²⁾	\$ —	\$ —	\$ 36,752,913	\$ 50,000 ⁽³⁾	\$ 36,752,913
	2020	\$ 231,450 ⁽²⁾	\$ —	\$ —	\$ 419,000	\$ —	\$ 419,000
<i>Christiana Obiaya</i> <i>Chief Financial Officer</i>	2021	\$ 222,115	\$ 100,000 ⁽⁴⁾	\$ 4,527,500	\$ 893,050	\$ —	\$ 5,742,665
<i>Thomas Doyle</i> <i>Chief Commercial Officer</i>	2021	\$ 258,077	\$ 31,272 ⁽⁵⁾	\$ 4,527,500	\$ 84,800	\$ —	\$ 4,901,649

(1) The amounts disclosed represent the aggregate grant date fair value of stock awards, which include restricted stock units ("RSU Award") and stock options received under stock option agreements entered into between Heliogen and Heliogen's named executive officers during 2021, computed in accordance with Financial Accounting Standards Board Accounting Standards Codification Topic 718 without consideration to the probability of achieving any performances. The assumptions used in calculating the grant date fair value of the RSU Awards and stock options reported in the Stock Awards column and Options Awards column, respectively, are set forth in Note 10 to our audited consolidated financial statements included in this Annual Report on Form 10-K for the year ended December 31, 2021. These amounts do not reflect the actual economic value that may be realized by the named executive officer upon the vesting of the RSU Awards or stock options, the exercise of the stock options, or the sale of any common stock acquired under such RSU Awards or stock options, which will depend on factors including the continued service of the executive and the future value of Heliogen's stock.

(2) During 2020 and through November 29, 2021, Mr. Gross' salary was paid by Idealab Studio, LLC ("Idealab"). Heliogen reimbursed Idealab for 100% of the cost of Mr. Gross' services to Heliogen. On November 29, 2021, Mr. Gross entered into an employment agreement with Heliogen and Heliogen started paying his salary directly.

(3) Represents reimbursement of attorney's fees incurred in connection with the negotiation of Mr. Gross's executive employment agreement.

(4) Represents payment of a one-time bonus to Ms. Obiaya.

(5) Represents payment of a one-time bonus for relocation expenses to Mr. Doyle.

Narrative Disclosure to Summary Compensation Table

Base Salary

Base salary is set at a level that is intended to reflect the executive's duties, authorities, contributions, prior experience and performance. Through November 29, 2021, Idealab made Mr. Gross available to serve as Heliogen's Chief Executive Officer. While Mr. Gross' salary was paid by Idealab during such time, Heliogen reimbursed Idealab for 100% of the cost of Mr. Gross' services.

Cash Bonus Awards

We do not have any formal arrangements with our named executive officers providing for annual cash bonus awards. Other than a one-time cash bonus of \$100,000 granted to Ms. Obiaya for performance and \$31,272 paid to Mr. Doyle as a one-time bonus for relocation expenses, Heliogen did not award the named executive officers any cash bonuses with respect to 2021 performance.

Option Awards

Heliogen's equity awards are designed to align the interests of employees and consultants, including our executive officers, with our interests and the interests of our stockholders. The Board or an authorized committee thereof is responsible for approving equity awards.

Historically, Heliogen has used stock options as an incentive for long-term compensation to its executive officers because stock options allow its executive officers to realize value from this form of equity compensation only if its stock price increases relative to the stock option's exercise price. Heliogen's executives generally are awarded an initial grant in the form of a stock option in connection with their commencement of employment with Heliogen. Additional grants may occur periodically in order to specifically incentivize executives with respect to achieving certain corporate goals or to reward executives for exceptional performance.

On January 23, 2021, Legacy Heliogen's board of directors granted Mr. Doyle an option to purchase 500,000 shares of Legacy Heliogen's common stock at an exercise price of \$0.35 per share under the 2013 Plan. In connection with the closing of the Business Combination, this option was assumed by us and converted into an option to purchase 1,006,642 shares of our common stock at an exercise price of \$0.18 per share. Mr. Doyle's option vested with respect to 25% of the shares subject to the option on January 19, 2022 and will continue to vest in 36 equal monthly installments thereafter, subject to his continued service through each vesting date.

On March 9, 2021, Legacy Heliogen's board of directors granted Ms. Obiaya an option to purchase 500,000 shares of Legacy Heliogen's common stock at an exercise price of \$0.59 per share under the 2013 Plan. In connection with the closing of the Business Combination, this option was assumed by us and converted into an option to purchase 1,006,642 shares of our common stock at an exercise price of \$0.30 per share. Ms. Obiaya's option vested with respect to 25% of the shares subject to the option on March 8, 2022 and will continue to vest in 36 equal monthly installments thereafter, subject to her continued service through each vesting date.

On November 10, 2021, Legacy Heliogen's board of directors granted Mr. Gross an option to purchase 5,023,000 shares of Legacy Heliogen's common stock at an exercise price of \$18.11 per share under the 2013 Plan. In connection with the closing of the Business Combination, this option was assumed by us and converted into an option to purchase 10,112,732 shares of our common stock at an exercise price of \$9.00 per share. The shares subject to Mr. Gross's option vest in 48 equal monthly installments measured from December 30, 2021, subject to his continued service through each vesting date. As described in more detail below under "—Agreements with Our Named Executive Officers—Bill Gross," certain of Mr. Gross's stock options, including the award described immediately above, and other equity awards are subject to accelerated vesting in certain termination and change in control scenarios.

Restricted Stock Unit Awards

On November 10, 2021, Legacy Heliogen's board of directors granted each of Ms. Obiaya and Mr. Doyle a RSU Award under our 2013 Plan. Each RSU Award covered 250,000 shares of Legacy Heliogen's common stock. In connection with the closing of the Business Combination, the RSU Awards were assumed by us and converted into RSU Awards covering 503,321 shares of our common stock. Pursuant to the terms of the RSU Award agreements, the RSU Awards will vest on the first date upon which both the "service-based requirement" and the "liquidity event requirement" are satisfied. The liquidity event requirement was satisfied upon the closing of the Business Combination. The service-based requirement provides that the RSU Awards will vest as to 6.25% on each quarterly vesting date following closing of the Business Combination, with the first installment vesting on March 15, 2022, subject to Ms. Obiaya's and Mr. Doyle's continued service through each vesting date.

Agreements with Our Named Executive Officers

We have entered into offer letters with each of our named executive officers setting forth the terms and conditions of such executive's employment with us. The offer letters generally provide for at-will employment and set forth the named executive officer's initial base salary, target variable compensation, eligibility for employee benefits, the terms of initial equity grants and in some cases severance benefits in the event of a qualifying termination.

Bill Gross

Mr. Gross entered into an executive employment agreement with Heliogen in November 2021. Pursuant to the terms of his executive employment agreement, Mr. Gross was entitled to an initial annual base salary of \$275,000, which increased to \$400,000 effective as of December 30, 2021. The executive employment agreement also provides for a discretionary annual bonus of up to 100% of Mr. Gross's then-current annual base salary, payable based upon the achievement of certain milestones as determined by the Board and Heliogen's overall performance.

The executive employment agreement further provides that, unless provided otherwise, any equity award granted to Mr. Gross under the 2013 Plan or our 2021 Plan that is subject to time-based vesting, to the extent such award is assumed, continued, or substituted by the surviving corporation in connection with a "change in control" (as defined in the applicable plan), and Mr. Gross continues to provide services to Heliogen or the successor corporation, will accelerate and become fully vested and exercisable in the event of a "qualifying termination" (as defined in the executive employment agreement, including a termination without "cause" or resignation for "good reason" and execution of a release of claims) that occurs within 12 months following the change in control. Upon a qualifying termination that does not occur within 12 months following a change in control, under the executive employment agreement, Mr. Gross will be eligible for accelerated vesting of his time-based equity awards that would have vested, had he remained in continuous service for an additional 12 months after the termination date. If Mr. Gross is terminated as a result of his death or "disability" (as defined in the executive employment agreement), Mr. Gross (or his estate) will receive an amount equal to the target bonus that he would have earned, prorated for the portion of the bonus year elapsed as of the termination date. Under the terms of the executive employment agreement, after Mr. Gross's termination, he will be required to reasonably cooperate with Heliogen in responding to reasonable requests in connection with any disputes brought against Heliogen, and will be paid \$195 per hour for the time devoted to such matters. The executive employment agreement also provides that Mr. Gross is eligible for reimbursement of up to \$50,000 in attorney's fees incurred in connection with the negotiation of the executive employment agreement. Mr. Gross is also eligible to participate in the employee benefit plans generally available to our employees and maintained by Heliogen.

Christiana Obiaya

Ms. Obiaya entered into an offer letter agreement with Heliogen on March 7, 2021. Pursuant to the terms of her offer letter agreement, Ms. Obiaya's current annual base salary was \$275,000. As of December 31, 2021, Ms. Obiaya's annual base salary increased to \$400,000, and her target annual bonus is 50% of her annual base salary. Ms. Obiaya is not eligible for severance protection under the terms of her offer letter agreement, but the agreement provides that 50% of any unvested shares subject to her initial option grant will accelerate and become immediately vested if, within six months after a change of control, Ms. Obiaya is terminated by Heliogen other than for "cause" or Ms. Obiaya resigns for "good reason" (each, as defined in her offer letter agreement). Ms. Obiaya also is eligible to participate in the employee benefit plans generally available to our employees and maintained by Heliogen.

Thomas Doyle

Mr. Doyle entered into an offer letter agreement with Heliogen on January 13, 2021. Pursuant to the terms of his offer letter agreement, Mr. Doyle's current annual base salary was \$275,000. Following completion of the Business Combination, Mr. Doyle's annual base salary increased to \$400,000, and his target annual bonus is 50% of his annual base salary. Mr. Doyle is not eligible for severance protection under the terms of his offer letter agreement, but the agreement provides that 50% of any unvested shares subject to his initial option grant will accelerate and become immediately vested if, within six months after a change of control, Mr. Doyle is terminated by Heliogen other than for "cause" or Mr. Doyle resigns for "good reason" (each, as defined in his offer letter agreement). Mr. Doyle also is eligible to participate in the employee benefit plans generally available to our employees and maintained by Heliogen.

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Other Compensation and Benefits

Benefits and Perquisites

Heliogen provides benefits to its executive officers on the same basis as is provided to all of its employees, including health, dental and vision insurance; life insurance; accidental death and dismemberment insurance; short-term and long-term disability insurance; flexible spending accounts; employee assistance program; and a work-from-home allowance.

Other than the director and officer insurance coverage Heliogen maintains for its directors and officers, Heliogen does not maintain any executive-specific health and welfare benefits or perquisites.

401(k) Plan

We maintain a 401(k) plan that provides eligible employees with an opportunity to save for retirement on a tax advantaged basis. Eligible employees are able to defer eligible compensation up to certain limits under the Internal Revenue Code of 1986, as amended (the "Code"), which are updated annually. Our 401(k) plan provides for a safe harbor employer matching contribution equal to 100% of the first three percent of eligible compensation and 50% of the next two percent of eligible compensation contributed to the plan by an employee. The 401(k) plan is intended to be qualified under Section 401(a) of the Code, with the related trust intended to be tax exempt under Section 501(a) of the Code. As a tax-qualified retirement plan, contributions to the 401(k) plan are deductible by us when made, and contributions and earnings on those amounts are not generally taxable to the employees until withdrawn or distributed from the 401(k) plan.

Outstanding Equity Awards at 2021 Year-End

The following table presents information regarding outstanding equity awards held by Heliogen's named executive officers as of December 31, 2021.

Name	Grant Date	Vesting Commencement Date	Option Awards				Stock Awards ⁽⁵⁾	
			Number of Securities Underlying Unexercised Options (#) Exercisable	Number of Securities Underlying Unexercised Options (#) Unexercisable	Option Exercise Price (\$)	Option Expiration Date	Number of Shares or Units That Have Not Vested (#)	Market Value of Shares or Units that Have Not Vested (\$)
Bill Gross	11/10/21	12/30/21	—	10,112,732 ⁽²⁾	9.00	11/09/31		
	12/21/20	12/21/20	1,258,303	3,774,910 ⁽²⁾⁽³⁾	0.18	12/20/30		
	12/06/18	06/26/18	3,557,666	652,044 ⁽²⁾	0.09	12/05/28		
Christiana Obiaya	03/09/21	03/08/21	—	1,006,642 ⁽³⁾⁽⁴⁾	0.30	03/08/31		
	11/10/21	—	—	—	—	—	503,321	\$ 7,811,542
Thomas Doyle	01/23/21	01/19/21	—	1,006,642 ⁽³⁾⁽⁴⁾	0.18	01/22/31		
	11/10/21	—	—	—	—	—	503,321	\$ 7,811,542

(1) All of the option awards were granted under Heliogen's 2013 Stock Incentive Plan.

(2) This option is subject to a four-year vesting schedule, with 1/48 of the shares subject to such option vesting each month following the vesting commencement date, subject to the named executive officer's continued service through each vesting date.

(3) 50% of any unvested shares subject to this option will accelerate and become immediately vested if, within six months after a change of control, the named executive officer is terminated by Heliogen other than for cause or the named executive officer resigns for good reason.

(4) This option is subject to a four-year vesting schedule, with 25% of the shares subject to such option vesting on the first anniversary of the vesting commencement date and 1/48 of the shares subject to such option vesting each month thereafter, subject to the named executive officer's continued service through each vesting date.

(5) Represents the market value of RSU Awards based on the closing price of Heliogen's common stock of \$15.52 as of December 31, 2021.

(6) 6.25% of the shares underlying the RSU Awards vest in quarterly installments with the first installment vesting on March 15, 2022, subject to the named executive officer's continuous service with Heliogen.

(7) 100% of any unvested shares subject to this option will accelerate and become immediately vested if, within twelve months after a change of control, the named executive officer is terminated by Heliogen other than for cause or the named executive officer resigns for good reason.

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The following table summarizes our equity compensation plan information as of December 31, 2021. Information is included for equity compensation plans approved by our stockholders. We do not have any equity compensation plans not approved by our stockholders.

Plan Category	(a) Number of Securities to be Issued Upon Exercise of Outstanding Options, Warrants and Rights	(b) Weighted Average Exercise Price of Outstanding Options, Warrants and Rights ⁽¹⁾	(c) Number of Securities Remaining Available for Future Issuance Under Equity Compensation Plans (Excluding Securities Reflected in Column (a))
Equity compensation plans approved by security holders			
2013 Stock Incentive Plan ⁽²⁾	45,268,225	\$ 2.41	—
2021 Equity Incentive Plan ⁽³⁾	—	—	11,884,163
2021 Employee Stock Purchase Plan ⁽⁴⁾	—	—	4,753,665
Equity compensation plans not approved by security holders			
TOTAL	45,268,225	\$ 2.41	16,637,828

- (1) The weighted average exercise price is calculated based solely on outstanding stock options. It does not take into account the shares of our common stock underlying RSU Awards, which have no exercise price.
- (2) Following the adoption of the 2021 Plan, no additional equity awards have been or will be granted under the 2013 Plan.
- (3) Our 2021 Plan provides that on January 1 of each calendar year, starting on January 1, 2022 through January 1, 2031, the number of shares of common reserved for issuance thereunder is automatically increased by a number equal to (i) 4% of the total number of shares of our common stock outstanding on December 31 of the fiscal year before the date of such automatic increase, or (ii) a lesser number of shares determined by our Board of Directors prior to the applicable January 1. On January 1, 2022, the number of shares of common stock available for issuance under our 2021 Plan increased by 7,334,681 shares pursuant to these provisions. This increase is not reflected in the table above.
- (4) Our 2021 ESPP provides that on January 1 of each calendar year, starting on January 1, 2022 through January 1, 2031, the number of shares of common reserved for issuance thereunder is automatically increased by a number equal to the lesser of (i) 1% of the total number of shares of our common stock outstanding on December 31 of the fiscal year before the date of such automatic increase, and (ii) 9,507,330 shares; provided that before the date of any such increase, our Board of Directors may determine that there will be no increase in the share reserve or that such increase will be less than the amount set forth in clauses (i) and (ii). On January 1, 2022, the number of shares of common stock available for issuance under our 2021 ESPP increased by 1,833,670 shares pursuant to these provisions. This increase is not reflected in the table above.

Non-Employee Director Compensation

In 2021, no director received cash retainers, equity, options, fees, or other compensation for service on Athena's or Legacy Heliogen's boards of directors. The Board expects to review director compensation periodically to ensure that director compensation remains competitive such that Heliogen is able to recruit and retain qualified directors. Heliogen has established a Board compensation program that is designed to align compensation with Heliogen's business objectives and the creation of stockholder value, while enabling Heliogen to attract, retain, incentivize and reward directors who contribute to the long-term success of Heliogen.

Non-Employee Director Compensation Policy

On December 30, 2021, our Board adopted an amended and restated non-employee director compensation policy. Pursuant to this policy, each member of our Board who is not our employee is eligible to receive the following compensation for his or her service as a member of our Board:

- For directors that join our Board before December 31, 2021, an initial equity grant equal to \$200,000, which vests ratably over a three-year period, with one-third vesting on each anniversary of the grant date, subject to the Board member's continued service on our Board; and
- An annual equity grant equal to \$200,000, which fully vests on the earlier of (i) one year following the date of grant or (ii) the day before the next annual meeting following the applicable grant date, subject to the Board member's continued service on our Board.

The lead independent director receives a cash retainer of \$45,000 for his or her service in that role. The chairs of the audit committee, compensation and human capital committee, and nominating and corporate governance committee receive cash retainers of \$25,000, \$20,000 and \$15,000, respectively, for his or her respective committee service as chair.

Our policy is to reimburse directors for reasonable and necessary out-of-pocket expenses incurred in connection with attending Board and committee meetings or performing other services in their capacities as directors.

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

The following table sets forth information known to us regarding the beneficial ownership of the common stock as of March 25, 2022, by:

- each person who is known by us to be the beneficial owner of more than 5% of the outstanding shares of the common stock;
- each of our current named executive officers and directors; and
- all of our current executive officers and directors, as a group.

Beneficial ownership is determined according to the rules of the SEC, which generally provide that a person has beneficial ownership of a security if he, she or it possesses sole or shared voting or investment power over that security, including options and warrants that are currently exercisable or exercisable within 60 days.

The beneficial ownership percentages set forth in the table below are based on 185,305,679 shares of common stock issued and outstanding as of March 25, 2022. The following table does not reflect record or beneficial ownership of any warrants to purchase common stock. In computing the number of shares of capital stock beneficially owned by a person and the percentage ownership of such person, we deemed to be outstanding all shares of our capital stock subject to options held by the person that are currently exercisable or exercisable within 60 days of March 25, 2022 and issuable upon the vesting of RSUs held by the person within 60 days of March 25, 2022. However, we did not deem such shares of our capital stock outstanding for the purpose of computing the percentage ownership of any other person.

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.

Name of Beneficial Owner ⁽¹⁾	Beneficial Ownership	
	Shares	%
5% Stockholders		
Entities affiliated with Prime Movers Lab Fund I LP ⁽²⁾	26,598,734	14.4%
Nant Capital, LLC ⁽³⁾	25,657,986	13.8%
NeoTribe Ventures I, L.P. for itself and as nominee for NeoTribe Associates I, L.P. ⁽⁴⁾	24,417,330	13.2%
Idealab Holdings, LLC ⁽⁵⁾	15,341,231	8.3%
Directors and Named Executive Officers		
Bill Gross ⁽⁶⁾	8,207,173	4.3%
Christiana Obiaya ⁽⁷⁾	325,060	*
Tom Doyle ⁽⁸⁾	367,004	*
Phyllis Newhouse ⁽⁹⁾	4,298,472	2.3%
Robert Kavner	—	—%
Julie Kane	—	—%
David Crane	—	—%
Stacey Abrams ⁽¹⁰⁾	15,000	*
Suntharesan Padmanathan	—	—%
All directors and current executive officers as a group (10 persons) ⁽¹¹⁾	15,176,709	7.8%

* Represents beneficial ownership of less than 1%.

(1) Unless otherwise noted, the business address of those listed in the table above is 130 West Union Street Pasadena, California 91103.

(2) This information is as of December 31, 2021 and is based on a Schedule 13G filed with the SEC on February 23, 2022 by Prime Movers Lab Fund I LP (“PML”), Prime Movers Lab GP I LLC (“PML GP I”), Prime Movers Lab GP II LLC (“PML GP II”), Heliogen PML SPV 1 LP (“Heliogen PML”) and Dakin Sloss. Consists of (i) 19,930,277 shares held by PML and (ii) 6,668,457 shares held by Heliogen PML. PML GP I is the general partner of PML and PML GP II is the general partner of Heliogen PML. Dakin Sloss is the manager of PML GP I and PML GP II and as a result may be deemed to have beneficial ownership of the shares held by PML and Heliogen PML. The address for each of the entities and individuals listed in this footnote is PO Box 12829, Jackson, WY 83002.

(3) This information is as of December 31, 2021 and is based on a Schedule 13G filed with the SEC on February 23, 2022 by Nant Capital LLC (“Nant Capital”), California Capital Equity, LLC (“CalCap”) and Dr. Patrick Soon-Shiong. Nant Capital beneficially owns 24,646,323 shares of the Company’s common stock. CalCap directly owns all of the equity interests of Nant Capital and Dr. Soon-Shiong directly owns all of the equity interests of CalCap. As a result, CalCap and Dr. Soon-Shiong may be deemed to beneficially own, and share with Nant Capital the power to vote and direct the vote, and the power to dispose or direct the disposition of, the 24,646,323 shares beneficially owned by Nant Capital. Dr. Soon-Shiong also directly beneficially owns 1,011,663 shares of the Company’s common stock. As a result, Dr. Soon-Shiong may be deemed to beneficially own, in the aggregate, 25,657,986 shares of the Company’s common stock. The address of the principal business office of Nant Capital, LLC is 450 Duley Road, El Segundo, CA 90245.

(4) This information is as of December 31, 2021 and is based on a Schedule 13G filed with the SEC on February 14, 2022. Consists of 23,471,588 shares of common stock held by NeoTribe Ventures I, L.P. (“NTV”) and 945,742 shares of common stock held by NeoTribe Associates I, L.P. (“NTA”). This information is as of December 31, 2021 and is based on a Schedule 13G filed with the SEC on February 14, 2022 by NTV, NTA, NeoTribe Partners I, LLC (“NTP”) and Krishna Kolluri (“Kolluri”). NTP, the general partner of NTV and NTA, may be deemed to have sole power to vote and dispose of these shares, and Kolluri, the managing member of NTP, may be deemed to have sole power to vote and dispose of these shares. The address for each of the entities and individuals listed in this footnote is 2744 Sand Hill Road, Suite 150, Menlo Park CA 94025.

(5) This information is as of December 31, 2021 and is based on a Schedule 13G filed with the SEC on March 10, 2022 by Idealab Holdings, LLC, a wholly-owned subsidiary of Idealab, a California corporation. Idealab is managed by a board of directors consisting of Bill Gross, Marcia Goodstein, Renee LaBran and Bob Kavner, and no single person has voting or dispositive authority over the securities reported herein. As such, each of the foregoing entities and individuals may be deemed to share beneficial ownership of the securities reported herein. Each of them 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.

(6) Represents 1,589,488 shares of common stock and 6,617,685 shares issuable for vested and exercisable options.

(7) Represents 293,603 shares issuable for vested and exercisable options within 60 days and 31,457 shares issuable upon vesting of RSUs within 60 days.

(8) Represents 335,547 shares issuable for vested and exercisable options within 60 days and 31,457 shares issuable upon vesting of RSUs within 60 days.

(9) The interests shown consist of (i) 3,713,656 shares of common stock following the automatic conversion of Athena’s Class B common stock on a one-for-one basis at the closing of the Business Combination and after giving effect to the waiver of the anti-dilution rights of Athena’s Class B common stock under Athena’s Charter pursuant to the A&R Sponsor Agreement, (ii) 246,483 shares of common stock issued in consideration of the Sponsor’s waiver of its anti-dilution rights under Athena’s Charter pursuant to the A&R Sponsor Agreement and (iii) 338,333 shares of common stock originally sold as private placement units simultaneously with the close of Athena’s initial public offering.

(10) Stacey Yvonne Abrams has voting and/or investment control over the securities held by Brockington Hall, LLC (“Brockington”) and may be deemed to beneficially own the securities owned by Brockington.

(11) Consists of (i) 5,902,960 shares beneficially owned by our current executive officers and directors, (ii) 9,201,399 shares issuable for vested and exercisable options within 60 days and (iii) 72,350 shares issuable upon vesting of RSUs within 60 days. Includes shares beneficially held by Mr. Schell, in addition to the shares held by the named executive officers and directors.

Certain Transactions with Related Parties

The following is a summary of transactions since January 1, 2020 to which we have been a party, in which the amount involved exceeded or will exceed the lesser of (x) \$120,000 or (y) 1% of the average of our total assets at December 31, 2020 and 2021, and in which any of our directors, executive officers or holders of more than 5% of our capital stock, or an affiliate or immediate family member thereof, had or will have a direct or indirect material interest other than compensation and other arrangements that are described in the sections titled "Executive Compensation" and "Non-Employee Director Compensation." We also describe below certain other transactions with our directors, former directors, executive officers and stockholders.

Athena Related Transactions and Agreements

Founder Shares

On December 28, 2020, the Sponsor paid \$25,000, or approximately \$0.003 per share, to cover certain Athena IPO costs in consideration for 9,816,667 shares of Athena Class B common stock, par value \$0.0001 (the "Founder Shares"). Up to 1,250,000 Founder Shares were subject to forfeiture by the Sponsor depending on the extent to which the underwriters' over-allotment option was exercised. On May 3, 2021, the underwriters' over-allotment option expired, not having been exercised, and accordingly, the 1,250,000 Founder Shares were forfeited.

The Sponsor agreed not to transfer, assign or sell any of its Founder Shares (i) with respect to 25% of such shares, until the closing of the Business Combination, (ii) with respect to 25% of the Founder Shares, until the closing price of Heliogen's common stock exceeds \$12.00 for any 20 trading days within a 30-trading day period following the closing of the Business Combination, (iii) with respect to 25% of the Founder Shares, until the closing price of Heliogen's common stock exceeds \$13.50 for any 20 trading days within a 30-trading day period following the closing of the Business Combination, and (iv) with respect to 25% of the Founder Shares, until the closing price of Heliogen's common stock exceeds \$17.00 for any 20 trading days within a 30-trading day period following the closing of the Business Combination or earlier, in any case, if, following a Business Combination, Heliogen completes a liquidation, merger, capital stock exchange or other similar transaction that results in all of its stockholders having the right to exchange their shares of common stock for cash, securities or other property. Any permitted transferees would be subject to the same restrictions and other agreements of the Sponsor with respect to any Founder Shares.

Private Warrants

Simultaneously with the closing of Athena's IPO, the Sponsor purchased an aggregate of 700,000 Private Placement Units at a price of \$10.00 per unit, for an aggregate purchase price of \$7,000,000, in a private placement. Each Private Placement Unit comprised one share of common stock and one-third of one warrant. Each whole private placement warrant is exercisable for one whole share of common stock at a price of \$11.50 per share, subject to adjustment. The Private Warrants will be non-redeemable and exercisable on a cashless basis so long as they are held by the Sponsor or its permitted transferees. If the Private Warrants are held by someone other than the Sponsor or its permitted transferees, the Private Warrants will be redeemable by Heliogen and exercisable by such holders on the same basis as the warrants included in the public units sold in Athena's IPO.

Related Party Note and Advances

On January 8, 2021, Athena issued an unsecured promissory note to the Sponsor for an aggregate of up to \$300,000 to cover expenses related to Athena's IPO. This loan was non-interest bearing and payable on the earlier of December 31, 2021 or the completion of Athena's IPO. Athena did not draw down any amounts under the promissory note. The Sponsor and certain affiliates of the Sponsor have instead made payments for offering costs and expenses on behalf of Athena which is recorded as due to related party.

Administrative Services Agreement

Athena entered into an agreement whereby, commencing on the date of Athena's initial public offering through the earlier of the consummation of a business combination or Athena's liquidation, Athena paid an affiliate of Athena's Sponsor a monthly fee of \$10,000 for office space, administrative and support services.

Legacy Heliogen Transactions and Agreements

Related Party Equity Financings

From April 2013 to December 2021, Legacy Heliogen issued:

- (i) an aggregate of 3,996,000 Series Seed Preferred Shares, an aggregate of 438,595 Series Seed-1 Preferred Shares and an aggregate of 1,672,818 Series Seed-2 Preferred Shares to Idealab Holdings, LLC ("Idealab Holdings"), one of Heliogen's 5% or greater stockholders, for an aggregate purchase price of approximately \$1.4 million;
- (ii) an aggregate of 8,374,898 Series A-1 Preferred Shares and an aggregate of 3,866,946 Series A-2 Preferred Shares to Nant Capital, LLC, one of Heliogen's 5% or greater stockholders, for an aggregate purchase price of approximately \$9.5 million,
- (iii) an aggregate of 9,305,442 Series A-1 Preferred Shares and an aggregate of 2,320,167 Series A-2 Preferred Shares to NeoTribe Ventures I, L.P. for itself and as nominee for NeoTribe Associates I, L.P., one of Heliogen's 5% or greater stockholders, for an aggregate purchase price of approximately \$8.0 million;
- (iv) an aggregate of 9,899,381 Series A-2 Preferred Shares to Prime Movers Lab Fund I LP, one of Heliogen's 5% or greater stockholders, for an aggregate purchase price of approximately \$12.8 million;
- (v) an aggregate of 289,855 Series Seed-3 Preferred Shares to Idealab Studio, LLC, one of Heliogen's stockholders who may be deemed an affiliate of Idealab Holdings and who may be deemed to be controlled by Bill Gross, for an aggregate purchase price of approximately \$200,000; and
- (vi) a SAFE note to Heliogen PML SPV 1LP, whose limited partners may be affiliates of Prime Movers Lab Fund I LP, for an aggregate purchase price of approximately \$27.7 million.

Related Party Lease and Other Services

Idealab, a holder of more than 5% of Heliogen's outstanding voting stock through its wholly owned subsidiary, Idealab Holdings, LLC, provides various services to Heliogen through a services agreement which includes leasing office space, accounting, human resources, legal, information technology, marketing, public relations, and certain other executive services. We are charged a fee for the specific services provided and these fees totaled \$1.3 million and \$0.8 million for the years ended December 31, 2021 and 2020, respectively.

In May 2021, Heliogen sub-leased a portion of its office space in Pasadena to Idealab for a term of seven years. The sub-lease has an initial annual base rent of approximately \$150,000 and contains a 3% per annum escalation clause. The sub-lease is subject to termination by either party upon six months prior written notice. Concurrently with the parties' entering into the sub-lease agreement, Idealab and Heliogen also entered into certain property management and shared facilities staffing agreements, which provide that Heliogen pays Idealab approximately \$3,000 per month for building management services and approximately \$13,000 per month for shared facilities staff and services (with proportional reimbursement of salaries). Such agreements are subject to termination right by either party with 90 days' prior written notice.

Related-Person Transactions Policy

Our Board adopted a written related-person transactions policy that sets forth our policies and procedures regarding the identification, review, consideration and oversight of related-person transactions. For purposes of our policy, a related-person transaction is a transaction, arrangement or relationship (or any series of similar transactions, arrangements or relationships) in which we and any related person are, were or will be participants, in which the amount involved exceeds \$120,000. Transactions involving compensation for services provided to us as an employee, consultant or director will not be considered related-person transactions under this policy.

Under the policy, a related person is any executive officer, director, nominee to become a director or a security holder known by us to beneficially own more than 5% of any class of our voting securities (a "significant stockholder"), including any of their immediate family members and affiliates, including entities controlled by such persons or such person has a 5% or greater beneficial ownership interest.

Each director and executive officer shall identify, and we shall request each significant stockholder to identify, any related-person transaction involving such director, executive officer or significant stockholder or his, her or its immediate family members and inform our audit committee pursuant to this policy before such related person may engage in the transaction.

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In considering related-person transactions, our audit committee takes into account the relevant available facts and circumstances, which may include, but are not limited to:

- the risk, cost and benefits to us;
- the impact on a director's independence in the event the related person is a director, immediate family member of a director or an entity with which a director is affiliated;
- the terms of the transaction; and
- the availability of other sources for comparable services or products.

Our audit committee shall approve only those related-party transactions that, in light of known circumstances, are in, or are not inconsistent with, the best interests of the Company and our stockholders, as our audit committee determines in the good faith exercise of its discretion.

Director Independence

The Board determined that each of the directors on the Board other than Bill Gross qualify as independent directors, as defined under the NYSE Listing Rules, and the Board consists of a majority of "independent directors," as defined under the rules of the SEC and NYSE listing rules relating to director independence requirements. In addition, we are subject to the rules of the SEC and NYSE relating to the membership, qualifications and operations of the audit committee, as discussed below.

Our independent directors meet in executive session without management present if circumstances warrant when the full Board convenes for a regularly scheduled meeting or a special meeting. The independent director at such executive sessions shall designate an independent director to preside over the executive session.

Item 14. Principal Accounting Fees and Services

BDO USA, LLP

Following the closing of the Business Combination, BDO USA, LLP ("BDO") was appointed as our independent registered accounting firm for the audit as of and for the year ended December 31, 2021. BDO has audited the financial statements of Legacy Heliogen since 2020. The fees of BDO presented below are not necessarily representative of the fees to be billed by BDO for the Company as a public company, but are presented solely to provide our stockholders with a basis to understand our historical relationship with BDO. The fees below were not pre-approved by the Audit Committee as these services were approved prior to the Business Combination.

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The following table represents aggregate fees billed to the Company by BDO for the years ended December 31, 2021 and December 31, 2020. We did not incur any audit-related, tax or other fees with BDO for the years ended December 31, 2021 or 2020.

<i>\$ in thousands</i>	Years ended December 31,	
	2021	2020
Audit fees ⁽¹⁾	\$ 1,184	\$ 251

(1) "Audit Fees" consist of fees in connection with the audit of the Company's annual consolidated financial statements, audited financial statements presented in this Annual Report on Form 10-K, review of its quarterly financial statements presented in our quarterly reports on Form 10-Q and services that are normally provided by the Company's independent registered public accounting firm in connection with statutory and regulatory filings or engagements for those fiscal years. Included in the 2020 Audit Fees, with respect to Legacy Heliogen, are fees incurred for the audit of Legacy Heliogen's financial statements as of and for the years ended December 31, 2020 and 2019.

Marcum LLP

On December 30, 2021, our audit committee dismissed Marcum LLP ("Marcum"), Athena's independent registered public accounting firm prior to the Business Combination, as the Company's independent registered public accounting firm.

The following table represents aggregate fees billed to the Company by Marcum for the year ended December 31, 2020 and through December 30, 2021. We did not incur any audit-related, tax or other fees with Marcum for the years ended December 31, 2021 or 2020.

<i>\$ in thousands</i>	Years ended December 31,	
	2021	2020
Audit fees ⁽¹⁾	\$ 196	\$ —

(1) “Audit Fees” consist of fees in connection with the audit of the Company’s annual consolidated financial statements, including audited financial statements presented in the Registration Statement on Form S-1 filed with the SEC in connection with our initial public offering, review of the quarterly financial statements presented in our quarterly reports on Form 10-Q and services that are normally provided by the Company’s independent registered public accounting firm in connection with statutory and regulatory filings or engagements for those fiscal years.

Part IV

Item 15. Exhibits and Financial Statement Schedules

(a) The following documents are filed as part of this report or incorporated by reference:

1. The consolidated financial statements of Heliogen listed on page F-1 of this Annual Report on Form 10-K/A. The report of Heliogen’s independent registered public accounting firm (PCAOB ID: 243) with respect to the above referenced financial statements are included in Item 8 of this Form 10-K/A. Their consent appears as Exhibit 23.1 of this Annual Report on Form 10-K/A.
2. The exhibits of Heliogen listed below under Item 15(b); all exhibits are incorporated herein by reference to a prior filing as indicated, unless designated by a *

(b) Exhibits:

EXHIBIT INDEX

Exhibit Number	Description	Incorporated by Reference			
		Form	File No.	Exhibit	Filing Date
2.1†	Business Combination Agreement, dated as of July 6, 2021, by and among Athena Technology Acquisition Corp., HeliMax Merger Sub, Inc. and Heliogen, Inc.	8-K	001-40209	2.1	July 7, 2021
3.1	Second Amended and Restated Certificate of Incorporation of Heliogen, Inc.	8-K	001-40209	3.1	January 6, 2022
3.2	Amended and Restated Bylaws of Heliogen, Inc.	8-K	001-40209	3.2	January 6, 2022
4.1	Specimen Common Stock Certificate of Heliogen, Inc.	8-K	001-40209	4.1	January 6, 2022
4.2	Form of Warrant Certificate of Heliogen, Inc.	S-1	001-40209	4.2	January 24, 2022
4.3	Warrant Agreement, dated March 16, 2021, by and between Athena Technology Acquisition Corp. and Continental Stock Transfer & Trust Company.	8-K	001-40209	4.1	March 22, 2021
4.4	Description of Securities registered under Section 12 of the Securities Exchange Act of 1934.	10-K	001-40209	4.4	March 31, 2022
10.1	Form of Subscription Agreement.	8-K	001-40209	10.3	July 7, 2021
10.2	Amended and Restated Securities Subscription Agreement, dated December 28, 2020, by and between Athena Technology Acquisition Corp. and Athena Technology Sponsor LLC.	S-1	333-252812	10.7	February 5, 2021
10.3	Sponsor Support Agreement, dated July 6, 2021, by and among Athena Technology Acquisition Corp., Heliogen, Inc. and Athena Technology Sponsor LLC.	8-K	001-40209	10.1	July 7, 2021
10.4	Stockholder Support Agreement, dated July 6, 2021, by and among Athena Technology Acquisition Corp. and certain stockholders of Heliogen, Inc.	8-K	001-40209	10.2	July 7, 2021
10.5	Registration Rights and Lock-Up Agreement.	8-K	001-40209	10.5	January 6, 2022
10.6#	Form of Indemnification Agreement of Heliogen, Inc.	8-K	001-40209	10.6	January 6, 2022
10.7#	2013 Equity Incentive Plan.	S-4	333-258606	99.2	August 9, 2021
10.8#	2021 Equity Incentive Plan.	8-K	001-40209	10.8	January 6, 2022
10.9	2021 Employee Stock Purchase Plan.	8-K	001-40209	10.9	January 6, 2022
10.10#	Form of Stock Option Grant Package under 2013 Equity Incentive Plan.	S-8	001-40209	99.3	March 7, 2022
10.11#	Form of RSU Grant Package under 2013 Equity Incentive Plan.	S-8	001-40209	99.4	March 7, 2022
10.12#	Form of Stock Option Grant Package under 2021 Equity Incentive Plan.	8-K	001-40209	10.10	January 6, 2022
10.13#	Form of RSU Grant Package under 2021 Equity Incentive Plan.	8-K	001-40209	10.11	January 6, 2022

Exhibit Number	Description	Incorporated by Reference			
		Form	File No.	Exhibit	Filing Date

10.14	Letter Agreement, dated March 16, 2021, by and among Athena Technology Acquisition Corp., Athena Technology Sponsor LLC and its officers and directors.	8-K	001-40209	10.1	March 22, 2021
10.15	Amendment to the Letter Agreement, dated March 16, 2021, by and among Athena Technology Acquisition Corp., Athena Technology Sponsor LLC and its officers and directors.	S-1	001-40209	10.13	January 24, 2022
10.16	Investment Management Trust Agreement, dated March 16, 2021, by and between Athena Technology Acquisition Corp. and Continental Stock Transfer & Trust Company, as trustee.	8-K	001-40209	10.2	March 22, 2021
10.17	Registration Rights Agreement, dated March 16, 2021, by and among Athena Technology Acquisition Corp. and Athena Technology Sponsor LLC.	8-K	001-40209	10.3	March 22, 2021
10.18	Amendment to Registration Rights Agreement, dated March 16, 2021, by and among Athena Technology Acquisition Corp. and Athena Technology Sponsor LLC.	8-K	001-40209	10.15	January 6, 2022
10.19	Private Placement Units Purchase Agreement, dated March 16, 2021, by and among Athena Technology Acquisition Corp. and Athena Technology Sponsor LLC.	8-K	001-40209	10.5	March 22, 2021
10.20#	Offer Letter, dated January 13, 2021, by and between Heliogen, Inc. and Tom Doyle.	8-K	001-40209	10.17	January 6, 2022
10.21#	Executive Employment Agreement, dated November 19, 2021, by and between William T. "Bill" Gross and Heliogen, Inc.	S-4/A	333-258606	10.15	November 19, 2021
10.22#	Offer Letter, dated January 30, 2018, by and between Edisun Microgrids, Inc. and Steve Schell.	S-4/A	333-258606	10.13	September 16, 2021
10.23#	Offer Letter, dated March 3, 2021, by and between Heliogen, Inc. and Christiana Obiaya.	S-4/A	333-258606	10.14	September 16, 2021
10.24	Promissory Note issued to Athena Technology Sponsor LLC, dated December 8, 2020, from Athena Technology Acquisition Corp.	S-1	333-252812	10.6	February 5, 2021
10.25	Administrative Support Agreement, dated March 16, 2021, by and between Athena Technology Acquisition Corp. and Athena Technology Sponsor LLC.	8-K	001-40209	10.4	March 22, 2021
10.26#	Non-Employee Director Compensation Policy dated December 30, 2021.	10-K	001-40209	10.26	March 31, 2022
21.1	List of Subsidiaries	10-K	001-40209	21.1	March 31, 2022

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Exhibit Number	Description	Incorporated by Reference			
		Form	File No.	Exhibit	Filing Date
23.1*	Consent of BDO USA, LLP, independent registered public accounting firm.				
31.1*	Certification of Principal Executive Officer Pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.				
31.2*	Certification of Principal Financial Officer Pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.				
32.1**	Certification of Principal Executive Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.				
32.2**	Certification of Principal Financial Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.				
101.INS*	Inline XBRL Instance Document				
101.CAL*	Inline XBRL Taxonomy Extension Calculation Linkbase Document				
101.SCH*	Inline XBRL Taxonomy Extension Schema Document.				
101.DEF*	Inline XBRL Taxonomy Extension Definition Linkbase Document				
101.LAB*	Inline XBRL Taxonomy Extension Labels Linkbase Document				
101.PRE*	Inline XBRL Taxonomy Extension Presentation Linkbase Document				
104*	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101).				

* Filed herewith.

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

† 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.

Indicates management contract or compensatory plan, contract or arrangement.

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SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

Heliogen, Inc.

/s/ Bill Gross

Bill Gross
Chief Executive Officer

Dated: May 23, 2022

Consent of Independent Registered Public Accounting Firm

Heliogen, Inc.
Pasadena, California

We hereby consent to the incorporation by reference in the Registration Statement on Form S-8 (No. 333-263346) of Heliogen, Inc. 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, which appear in this Form 10-K/A.

/s/ BDO USA, LLP

Los Angeles, California
May 23, 2022

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

I, Bill Gross, certify that:

1. I have reviewed this Annual Report on Form 10-K/A for the period ended December 31, 2021 of Heliogen, Inc. (the “registrant”);
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant’s other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c. Evaluated the effectiveness of the registrant’s disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d. Disclosed in this report any change in the registrant’s internal control over financial reporting that occurred during the registrant’s most recent fiscal quarter (the registrant’s fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant’s internal control over financial reporting; and
5. The registrant’s other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant’s auditors and the audit committee of the registrant’s board of directors (or persons performing the equivalent functions):
 - a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant’s ability to record, process, summarize and report financial information; and
 - b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant’s internal control over financial reporting.

Date: May 23, 2022

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

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

I, Christiana Obiaya, certify that:

1. I have reviewed this Annual Report on Form 10-K/A for the period ended December 31, 2021 of Heliogen, Inc. (the “registrant”);
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant’s other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c. Evaluated the effectiveness of the registrant’s disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d. Disclosed in this report any change in the registrant’s internal control over financial reporting that occurred during the registrant’s most recent fiscal quarter (the registrant’s fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant’s internal control over financial reporting; and
5. The registrant’s other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant’s auditors and the audit committee of the registrant’s board of directors (or persons performing the equivalent functions):
 - a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant’s ability to record, process, summarize and report financial information; and
 - b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant’s internal control over financial reporting.

Date: May 23, 2022

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

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

In connection with this Annual Report on Form 10-K/A for the period ended December 31, 2021 of Heliogen, Inc. (the "Company") as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Bill Gross, Chief Executive Officer of the Company, certify, pursuant to 18 U.S.C Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

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

Date: May 23, 2022

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

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

In connection with this Annual Report on Form 10-K/A for the period ended December 31, 2021 of Heliogen, Inc. (the "Company") as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Christiana Obiaya, Chief Financial Officer of the Company, certify, pursuant to 18 U.S.C Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

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

Date: May 23, 2022

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