

**UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
Washington, D.C. 20549  
FORM 10-K**

(Mark One)

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 001-39525

**ESS Tech, Inc.**

(Exact name of registrant as specified in its charter)

**Delaware**

(State or other jurisdiction of  
incorporation or organization)

**26440 SW Parkway Ave., Bldg. 83**

**Wilsonville, Oregon**

(Address of Principal Executive Offices)

**98-1550150**

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

**97070**

(Zip Code)

**(855) 423-9920**

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	GWH	New York Stock Exchange
Warrants, each whole warrant exercisable for one share of common stock at an exercise price of \$11.50	GWH.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 and posted on its corporate web site, if any, every Interactive Data File required to be submitted and posted 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 and post such files). Yes  No

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

Large accelerated filer

Accelerated filer

Non-accelerated filer

Smaller reporting company

Emerging growth company

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

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

As of June 30, 2021, the last business day of the registrant's most recently completed second fiscal quarter, the aggregate market value of the then outstanding Class A ordinary shares, par value \$0.0001, of ACON S2 Acquisition Corp., our predecessor ("STWO"), computed by reference to the closing sales price for such shares on June 30, 2021, as reported on the Nasdaq Capital Market, was \$261,000,000 (based on the closing sales price of such shares on June 30, 2021 of \$10.44).

As of February 28, 2022, 152,556,734 shares of Common Stock, par value \$0.0001, were issued and outstanding.

Documents Incorporated by Reference: None.

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## DEFINITIONS

In this document:

“**2014 Plan**” means the ESS 2014 Equity Incentive Plan, as amended, supplemented or modified from time to time.

“**2021 Employee Stock Purchase Plan**” means the ESS Tech, Inc. 2021 Employee Stock Purchase Plan, as amended, supplemented or modified from time to time.

“**2021 Plan**” means the ESS 2021 Equity Incentive Plan, as amended, supplemented or modified from time to time.

“**Business Combination**” means the transactions contemplated by the Merger Agreement.

“**Code**” means the Internal Revenue Code of 1986, as amended.

“**Closing**” means the consummation of the Business Combination.

“**Closing Date**” means October 8, 2021, the date on which the Closing occurred.

“**Common Stock**” means ESS’ common stock, par value \$0.0001 per share.

“**Companies Act**” means the Companies Act (2021 Revision) of the Cayman Islands as the same may be amended from time to time.

“**DGCL**” means the General Corporation Law of the State of Delaware.

“**ESPP**” means the ESS Tech, Inc. 2021 Employee Stock Purchase Plan, as amended, supplemented or modified from time to time.

“**ESS**” or the “**Company**” means ESS Tech, Inc., a Delaware corporation (formerly known as ACON S2 Acquisition Corp.).

“**Exchange Act**” means the U.S. Securities Exchange Act of 1934, as amended.

“**GAAP**” means United States generally accepted accounting principles.

“**JOBS Act**” means the Jumpstart Our Business Startups Act of 2012, as amended.

“**Legacy ESS**” means ESS Tech, Inc., a Delaware corporation, prior to the Closing.

“**Merger Agreement**” means the Agreement and Plan of Merger, dated as of May 6, 2021, among Legacy ESS, ESS and Merger Sub.

“**Merger Sub**” means SCharge Merger Sub, Inc., a Delaware corporation and wholly-owned direct subsidiary of STWO.

“**NYSE**” means the New York Stock Exchange.

“**PIPE Financing**” means the sale of PIPE Shares to the PIPE Investors, for a purchase price of \$10.00 per share and an aggregate purchase price of \$250 million, in a private placement.

“**PIPE Investors**” means the purchasers of the PIPE Shares.

“**PIPE Shares**” means an aggregate of 25,000,000 shares of Common Stock issued to PIPE Investors in the PIPE Financing.

“**Private Placement Warrants**” means the warrants to purchase shares of Common Stock purchased by the Sponsor in a private placement in connection with the STWO IPO, exercisable for one share of Common Stock at a price of \$11.50 per share, subject to adjustments.

“**Public Warrants**” means the warrants to purchase shares of Common Stock that are publicly traded on the NYSE under the ticker symbol “GWH.W,” exercisable for one share of Common Stock at a price of \$11.50 per share, subject to adjustments.

“**SBE**” means SB Energy Global Holdings One Ltd.

“**SEC**” means the U.S. Securities and Exchange Commission.

“**Securities Act**” means the U.S. Securities Act of 1933, as amended.

“**Sponsor**” means ACON S2 Sponsor, L.L.C., a Delaware limited liability company.

“**STWO**” means ACON S2 Acquisition Corp., a Cayman Islands exempted company.

“**STWO IPO**” means STWO’s initial public offering of Class A ordinary shares, consummated on September 21, 2020.

“**Warrants**” means the Public Warrants and Private Placement Warrants.

## CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K, including, without limitation, statements in “Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations,” includes forward-looking statements within the meaning of Section 27A of the Securities Act and Section 21E of the Exchange Act. These forward-looking statements can be identified by the use of forward-looking terminology, including the words “believes,” “estimates,” “anticipates,” “expects,” “intends,” “plans,” “possible,” “may,” “might,” “will,” “potential,” “projects,” “predicts,” “continue,” “could,” “would” or “should,” or, in each case, their negative or other variations or comparable terminology. These words and similar expressions may identify forward-looking statements, but the absence of these words does not mean that a statement is not forward-looking. These forward-looking statements, which are subject to risks, uncertainties and assumptions about us, may include projections of our future financial performance, our anticipated growth strategies and anticipated trends in our business.

These statements are based on management’s current expectations, but actual results may differ materially due to various factors, risks, and uncertainties, including, but not limited to:

- our financial and business performance, including financial projections and business metrics;
- changes in our strategy, future operations, financial position, estimated revenues and losses, projected costs, prospects and plans;
- the implementation, market acceptance and success of our technology implementation and business model;
- our ability to scale in a cost-effective manner;
- developments and projections relating to our competitors and industry;
- the impact of health epidemics, including the COVID-19 pandemic, on our business and the actions we may take in response thereto;
- 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 JOBS Act;
- our future capital requirements and sources and uses of cash;
- our ability to obtain funding for our operations;
- our business, expansion plans and opportunities;
- our relationships with third-parties, including our suppliers;
- the outcome of any known and unknown litigation and regulatory proceedings;
- our ability to successfully deploy the proceeds from the Business Combination; and
- other risks and uncertainties discussed in “Item 1A. Risk Factors” and elsewhere in this report.

The forward-looking statements contained in this report are based on our current expectations and beliefs concerning future developments and their potential effects on us. There can be no assurance that future developments affecting us will be those that we have anticipated. These forward-looking statements involve a number of risks, uncertainties (some of which are beyond our control) and other assumptions that may cause actual results or performance to be materially different from those expressed or implied by these forward-looking statements. These risks and uncertainties include, but are not limited to, those factors described in “Item 1A. Risk Factors.” Should one or more of these risks or uncertainties materialize, or should any of our assumptions prove incorrect, actual results may vary in material respects from those projected in these forward-looking statements. We undertake no obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise, except as may be required under applicable securities laws. These risks and others described in “Item 1A. Risk Factors” may not be exhaustive.

By their nature, forward-looking statements involve risks and uncertainties because they relate to events and depend on circumstances that may or may not occur in the future. We caution you that forward-looking statements are not guarantees of future performance and that our actual results of operations, financial condition and liquidity, and developments in the industry in which we operate may differ materially from those made in or suggested by the forward-looking statements contained in this report. In addition, even if our results or operations, financial condition and liquidity, and developments in the industry in which we operate are consistent with the forward-looking statements contained in this report, those results or developments may not be indicative of results or developments in subsequent periods.

## PART I

### ITEM 1. BUSINESS

Unless the context otherwise requires, all references in this section to “we,” “us,” “our,” or the “Company” refer to ESS Tech, Inc. and its subsidiaries.

#### Business Combination

On October 8, 2021 (the “Closing Date”), ACON S2 Acquisition Corp. (“STWO”), a publicly traded special purpose acquisition company, consummated a merger pursuant to the Agreement and Plan of Merger, dated May 6, 2021 (the “Merger Agreement”), by and among STWO, SCharge Merger Sub, Inc., a Delaware corporation and wholly owned direct subsidiary of STWO (“Merger Sub”), and ESS Tech, Inc., a Delaware corporation (“Legacy ESS”) following the approval at a special meeting of the stockholders of STWO held on October 5, 2021.

Pursuant to the terms of the Merger Agreement, STWO deregistered by way of continuation under the Cayman Islands Companies Act (2021 Revision) and registered as a corporation in the State of Delaware under Part XII of the Delaware General Corporation Law (the “Domestication”), and a business combination between STWO and ESS was effected through the merger of Merger Sub with and into Legacy ESS, with ESS surviving as a wholly owned subsidiary of STWO (together with the other transactions described in the Merger Agreement, the “Business Combination”). On the Closing Date, STWO changed its name from “ACON S2 Acquisition Corp” to “ESS Tech, Inc.” (the “Company” or “ESS”), and our Common Stock and Public Warrants began trading on the NYSE under the ticker symbols “GWH” and “GWH.W,” respectively.

#### Business Overview

ESS is a long-duration energy storage company specializing in iron flow battery technology. We design and produce long-duration batteries predominantly using earth-abundant materials that we believe can be cycled over 20,000 times without capacity fade. Because we designed our batteries to operate using an electrolyte of primarily salt, iron and water, they are non-toxic and substantially recyclable. Our batteries provide flexibility to grid operators and energy assurance for commercial and industrial customers. Our technology addresses energy delivery, duration and cycle-life in a single battery platform that compares favorably to lithium-ion batteries, the most widely deployed alternative technology. Using our iron flow battery technology, we are developing two products, each of which is able to provide reliable, safe, long-duration energy storage. As of December 31, 2021, we did not have any second-generation products fully deployed and we had not yet met revenue recognition criteria, but we began shipping our second-generation Energy Warehouses in the third quarter of 2021 and were in the process of installing and commissioning such units. With each battery deployed, we will further our mission to accelerate the transition to a zero-carbon energy future with increased grid reliability.

Our batteries are non-flammable, non-toxic, do not have explosion risk and can operate in temperatures ranging from -5°C to 50°C without requiring heating or cooling systems, so they can be located in sites where lithium-ion batteries cannot be placed due to fire, chemical or explosion risks. In addition, our batteries are environmentally sustainable, predominantly utilizing easily sourced materials and recyclable components.

Our batteries and technology can be purchased with a ten-year performance guarantee which is backed by an investment-grade, ten-year warranty and project insurance policies from Munich Re, a leading provider of reinsurance, primary insurance and insurance-related risk solutions, which stands behind the performance of our energy storage products. To our knowledge, we are the first long-duration energy storage company to receive this type of insurance, which provides a warranty backstop for our proprietary flow battery technology, supporting our performance guarantee regardless of project size or location and de-risking the technology for our customers. We have also collaborated with Munich Re to develop separate project finance coverage. This allows us to secure project financing when installing our energy storage products, reducing the cost of capital for deployment, and which can be extended in order to provide long-term assurance of project performance to our customers, investors and lenders. Bonding and surety capital are provided through Aon and OneBeacon Insurance Group (“OneBeacon”) as well as qualification from the U.S. Export-Import Bank, which provides additional product assurance. We believe each of these elements allows us to increase our total addressable market, as customers have reduced technology risk, financing risk and importing risk.

We believe that as we scale up our production, our battery technology will be priced competitively. When comparing products on a lifetime levelized cost of storage (“LCOS”) basis, which is the total cost of the investment in an electricity storage technology divided by its cumulative delivered electricity, we expect our batteries to be less expensive on a LCOS basis than lithium-ion alternatives for storage durations greater than four hours, which we believe is the operational maximum for lithium-ion technologies. Our cost advantage increases as the storage duration extends beyond four hours because of the scalable nature of our technology.

Energy storage solutions of various sizes and durations must be installed throughout global electrical grids to enable decarbonization in line with global climate objectives. Our energy storage products are intended to supply long-duration power across this expanding spectrum of use cases. As described below in the section entitled “—Our Technology and Products,” we believe our energy storage products will be capable of addressing customer needs across multiple use cases and markets. We are an early mover in long-duration energy storage and we believe we will enable more rapid implementation of renewable energy while also improving grid stability. The safety, flexibility and durability of our energy storage products enable customers to use them in nearly any location globally. Examples of use cases range from localized energy storage at commercial and industrial sites to grid-scale use cases, such as peaker plant replacement and grid stabilization.

### **Our Technology and Products**

Our long-duration iron flow batteries are the product of nearly 50 years of scientific advancement. In the 1970’s, researchers first developed the concept of iron flow batteries. Despite realizing the battery’s promising ability to store energy, these researchers found that the reaction between the positive and negative sides created hydroxide formations that clogged the electrodes and reduced the activity of the electrolytes. Hydroxide formation caused rapid degradation in early iron flow batteries after only a few cycles. Unable to prevent the hydroxide from forming, these scientists were forced to abandon their work.

After years of neglect, our founders, Craig Evans and Dr. Julia Song, began advancing this technology in 2011 and formed Legacy ESS. Building upon this promising concept, our team has significantly enhanced the technology, improved round-trip efficiency and developed an innovative and patented solution to the hydroxide build-up problem. Our proprietary solution to eliminate the hydroxide formation is known as the Proton Pump, and it works by utilizing hydrogen generated by side reactions on the negative electrode. The Proton Pump converts the hydrogen back into protons in the positive electrolyte. This process eliminates the hydroxide and stabilizes the pH level of the system. The Proton Pump allows the electrolyte to be used for over 20,000 cycles without any capacity fade.

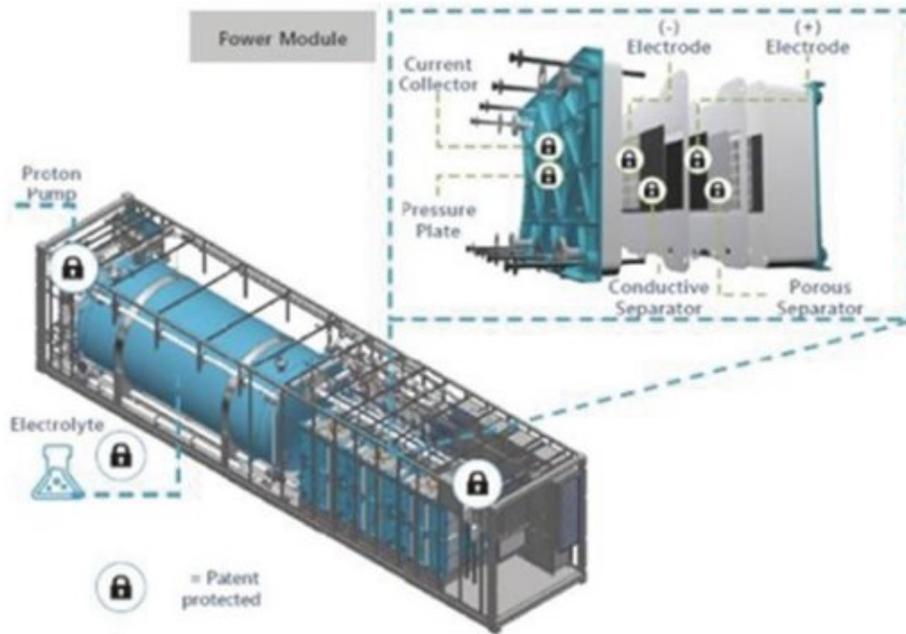
Our iron flow batteries store energy by converting electrical energy into chemical energy. Each battery module is made up of one or more cells and each of these cells are made up of a negative electrode, and a positive electrode and these two electrodes are separated by a porous separator. On the positive side (positive electrode) of the battery during charge, ferrous iron (Fe<sup>+2</sup>) is oxidized into ferric iron (Fe<sup>+3</sup>) and on the negative side (negative electrode) of the battery, ferrous iron is reduced to iron metal. The porous separator is used to minimize the positive and the negative electrolyte from mixing, which helps improve the coulombic efficiency of the battery. The positive and negative electrolytes are stored separately in tanks outside of the battery and this electrolyte is constantly pumped in and out of the battery while in operation. To convert the chemical energy back to electrical energy, the reaction is reversed; on the positive side of the battery, ferric iron is reduced to ferrous iron and on the negative side, metallic iron is oxidized into ferrous iron. During these charge and discharge cycles the pH of the positive and negative electrolyte can change dramatically. The Proton Pump ensures that the electrolyte pH remains stable and clear of any hydroxides. The duration of stored energy can be independently varied from the power. To add duration to our products all that is required is the addition of electrolytes to the tank. This electrolyte, consisting of iron, potassium or sodium chloride and water, is extremely inexpensive, allowing for very low marginal costs of energy and making our technology attractive for long-duration energy storage.

Our iron flow batteries store energy by charging positive and negative electrolyte tanks that are separated by a membrane. In order to release energy, we generate a reaction between the tanks via the membrane. The Proton Pump ensures that the membrane remains clear of hydroxide build-up and balances the electrolyte’s pH level. The duration of storage we can offer is a factor of the tank sizes, while the power generated is a factor of the membrane size. We can increase the size of the electrolyte tanks at a relatively low cost, enabling us to offer longer durations of storage at an attractive price.

Using our iron flow battery technology, we are developing two products, each of which is able to provide reliable, safe, long-duration energy storage. Our first energy storage product, the Energy Warehouse, is our “behind-the-meter” solution (referring to solutions that are located on the customers’ premise, behind the service demarcation with the utility) that offers energy storage ranging from 50 kilowatt (“kW”) to 90 kW and four to 12-hour duration. A 50 kW system, when used for eight hours of storage, can power the equivalent of 20 homes with a total output of 400 kilowatt-hours (“kWh”). Energy Warehouses are deployed in shipping container units, allowing for a fully turnkey system that can be installed easily at nearly any customer’s site. Potential use cases for Energy Warehouses include microgrids, peaker plant replacement on a small-scale and commercial and industrial (“C&I”) demand. For customers who require additional energy storage capacity, multiple units can be added to the same system. The first generation of our Energy Warehouse was deployed in 2015. Since then, all of our first-generation units have been returned to us except for two where the prototype trials continue. As of December 31, 2021, we did not have any second-generation products fully deployed and we had not yet met revenue recognition criteria, but we began shipping our second-generation Energy Warehouses in the third quarter of 2021 and were in the process of installing and commissioning such units.

Our second, larger scale energy storage product, the Energy Center, is a “front-of-the-meter” solution, meaning that it is designed for use in front of the service demarcation with the utility. Energy Center solutions are designed specifically for utilities, independent power producers (“IPPs”) and large C&I consumers. The Energy Center offers a fully customizable configuration range and is installed to meet our customers’ power, energy and duration needs. We anticipate energy storage capacities starting at three megawatts (“MW”) and six to 12-hour duration. The Energy Center’s modular design allows the product to scale to meet IPP and utility-scale applications, including large renewable-plus-storage projects and standalone energy storage projects. The modular design of the Energy Center also allows for it to be flexibly configured to meet varying power and energy capacity needs and deployment in a variety of settings.

For both of our energy storage products, the intellectual property and points of differentiation are contained within the Proton Pump, power module and electrolyte. These components are protected by trade secrets, patents (both granted and in process) and years of research. The remainder of the Energy Warehouse and the Energy Center are intentionally designed to be easily produced. By using standard pumps and equipment and easily fabricated enclosures, our energy storage products can be assembled almost anywhere and produced at an efficient cost.



### *ESS' Critical Technology*

#### **Customers**

Our potential customers include both utilities and commercial and industrial (“C&I”) end users. Our potential customers are interested in several use cases including solar shifting, peak shaving, price arbitrage, utility ancillary services and microgrids.

We intend to serve customers in both behind-the-meter and front-of-the-meter markets. In behind-the-meter applications, customers will use our energy storage products to reduce energy costs, integrate with renewable energy solutions to achieve corporate sustainability goals, and to enhance their energy resiliency. Behind-the-meter customers may include microgrids and small-scale C&I customers.

Front-of-the-meter customers, in contrast, are primarily utilities experiencing high rates of renewable energy penetration and requiring energy storage to help balance the grid, and independent power producers who can leverage energy storage to improve the economics of renewable energy projects. These customers use our energy storage products to store energy on a utility scale that they can then utilize or sell to their customers when needed. Over time, we expect our front-of-the-meter customer base to expand to include additional types of energy suppliers. Current customers of ours include large utility companies. We also plan to sell products to IPPs and Project Developers.

We have designed the Energy Warehouse and Energy Center to address the needs of these two distinct markets. The Energy Warehouse is intended for behind-the-meter use owing to its small size and convenient turnkey packaging. The Energy Center can be used by larger customers in both the behind-the-meter and front-of-the-meter markets.

## Suppliers

Our batteries are made predominantly of earth-abundant, non-toxic materials. These materials are considerably less expensive than rare earth metals that make up other batteries and as a result make up a low percentage of the total costs for our batteries. Because these materials are widely available, there are multiple suppliers for each input. In addition, we use limited high cost materials such as platinum in our manufacturing. The mechanical elements and control systems of our batteries are comprised of commercially available equipment that can be supplied by many manufacturers.

## Partnerships

- *Munich Re*: Our batteries and technology can be purchased with a ten-year performance guarantee which is backed by investment-grade, ten-year warranty and project insurance policies from Munich Re, a leading provider of reinsurance, primary insurance and insurance-related risk solutions, which stands behind the performance of our energy storage products. We are the first long-duration energy storage company to receive this type of insurance, which provides a warranty backstop for our proprietary flow battery technology, supporting our performance guarantee regardless of project size or location and de-risking the technology for our customers. We have also collaborated with Munich Re to develop separate project finance coverage. This allows us to secure project financing when installing our energy storage products, reducing the cost of capital for deployment, and which can be extended in order to provide long-term assurance of project performance to our customers, investors and lenders.
- *OneBeacon Insurance*: Through OneBeacon, we will offer growing project surety capacity and corporate bonding options to our customers.
- *Export-Import Bank of the United States*: The Export-Import Bank of the United States (“EXIM”) is the official export credit agency of the United States. EXIM equips U.S. businesses with the financing tools necessary to compete for global sales when the private sector lenders are unable or unwilling to provide financing. Our energy storage products are qualified by EXIM and can provide financing for qualified overseas buyers.

## Research & Development

Since January 1, 2019, we have invested approximately \$50 million on improving our technology and bringing our energy storage products to market. Our research and development efforts are conducted in Oregon and supported by our approximately 50 employees in research and development.

To maintain our leadership position in the long-duration energy storage market, it is essential to continue our ongoing research and development activities. We have a research and development roadmap for additional breakthroughs to extend our technology advantages further. Expanding our technological capabilities to alternate chemistries and technologies is also a long-term goal of our research and development team.

## Intellectual Property

Intellectual property is an integral differentiator for our business, and we rely upon a combination of patents, copyrights and trade secrets to protect our proprietary technology. We believe that we have enforceable intellectual property protection over all critical design elements as well as the key enabling technologies for iron flow batteries. We have developed a significant patent portfolio. We have over 125 patents that are granted or in the pipeline and an undisclosed number of trade secrets and identified patents. We continually review our efforts to assess the existence and patentability of new intellectual, proprietary technology. We believe that we have the world-leading iron flow expertise and an identified roadmap to additional technological advancements.

## Competition

The energy storage industry is highly competitive. The declining cost of renewable energy, the decrease in battery costs and improving battery technologies are shifting customer demands causing the industry to evolve and expand. The main competitive factors in the energy storage market include, but are not limited to, safety and reliability, duration, performance and uptime, operational flexibility, asset life length and cyclability, ease of integration, operability in extreme temperatures, environmental sustainability, historical track record, and field-proven technology.

With the rising demand for clean electric power solutions with lower greenhouse gas emissions, there has been a transition to renewable energy sources and increasing penetration of distributed energy infrastructure. This industry transformation has created an opportunity for an increased role for long-duration energy storage solutions like ours. Climate change will also result in more unpredictable weather events including extreme temperatures, hurricanes and wildfires. Our technology can operate efficiently and effectively in these extreme weather conditions and still maintain grid stability. As a pioneer of iron flow battery technology solutions that are well-suited for long-duration applications, we have a significant edge over our competition in this rapidly evolving environment. Our key competitors include different energy storage technologies

such as lithium-ion batteries, lithium metal batteries, vanadium or zinc bromine batteries, sodium sulfur batteries, compressed air and pumped-storage hydropower. Key competitors in the traditional lithium-ion space include Samsung Electronics Co., Ltd., LG Chem, Ltd., Sungrow Power Supply Co., Ltd., Tesla, Inc. and Contemporary Amperex Technology Co. Limited. Key competitors in the non-lithium-ion space include Eos Energy Enterprises, Inc., Malta Inc., Enerox GmbH, Highview Power PTY Ltd., and VoltStorage GmbH. Many of our competitors have substantially greater financial, marketing, personnel and other resources than we do. Although we are small compared to our competitors, we believe we are well-positioned to compete successfully in the market supported by our innovative iron flow battery technology, strategic partnerships and premier leadership team with a proven track record of success.

New technologies may enter the market that may have additional or superior advantages to our offerings. A variety of newer and emerging companies have announced plans to develop 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 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.

### **Government Regulations and Compliance**

We operate in the heavily regulated energy sector. As such, there are 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. Renewable energy is a priority for both the Biden administration as well as state and local governments across the country.

On the federal level, tax credits are currently in place that incentivize the deployment of renewable energy and battery storage. Battery storage projects storing energy from renewable energy sources are eligible for Investment Tax Credits that allow project developers to monetize and sell the tax losses they experience from the creation of their projects. Additionally, battery storage is eligible for accelerated depreciation via the federal government's Modified Accelerated Cost Recovery System. Both policies provide tax and financing advantages for battery storage projects. They lower the capital requirements for renewables projects to be developed and open a new source of funding for these projects.

While much is still to be determined, 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 would need to be invested in long-duration battery storage, potentially a benefit for a company like ESS.

State incentives have also driven growth in the deployment of renewable battery and energy storage. States with high Renewable Portfolio Standards, for example, have seen greater deployment of renewables than states with similar renewable resources that lack such requirements.

In November 2020, PJM Interconnection L.L.C., a regional transmission organization that coordinates the movement of wholesale electricity in all or parts of 13 states and the District of Columbia, amended its manual for generation interconnection requests to allow all previously permitted wind and solar projects to add energy storage to their project application without forfeiting their spot in the queue. This type of regulation may expedite the deployment of energy storage across the region. Replicating this policy nationwide would have an even greater impact.

Finally, we are subject to federal, state and local requirements on the environment, 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 Oregon.

### **Human Capital Management**

We pride ourselves on our innovative technology and our employees are dedicated to our strategic mission. More than half of our employees are involved in product manufacturing. As of December 31, 2021, we employed 160 full-time employees, based primarily in our headquarters in Wilsonville, Oregon.

We are an Equal Employment Opportunity and Affirmative Action employer. All aspects of employment including the decision to hire, promote, discipline, or discharge, are based on merit, competence, performance, and business needs. We do not discriminate on the basis of any status protected under federal, state, or local law.

Many of our employees are highly skilled in technical areas related to energy storage. We also supplement our workforce with consultants or independent contractors as necessary.

Our employees are key to our success as a company, and we are committed to attracting, developing and retaining the best talent. We are currently establishing and/or improving our recruiting, retention and development processes.

We seek to provide employees with competitive compensation and benefits consistent with positions, skill levels, experience, knowledge, and geographic location.

The Compensation Committee assists our board of directors in its oversight of human capital management including, corporate culture, diversity and inclusion, recruiting, retention, attrition, talent management, career development and progression, succession and employee relations.

The success of our business is connected to the well-being of our team members. Accordingly, we are committed to the health, safety and wellness of our team members worldwide. In response to the COVID-19 pandemic, we implemented changes in our operations that we determined were in the best interest of our team members, our customers and partners, and the communities in which we operate.

## **ITEM 1A. RISK FACTORS**

*Investing in our Common Stock involves a high degree of risk. Before making an investment decision, you should consider carefully the risks and uncertainties described below, together with all of the other information in this Annual Report on Form 10-K, including our consolidated financial statements and related notes thereto included elsewhere in this Annual Report on Form 10-K and in our other filings with the Securities and Exchange Commission (“SEC”), before deciding whether to invest in our Common Stock. Our business, operating results, financial condition or prospects could also be harmed by risks and uncertainties not currently known to us or that we currently do not believe are material. If any of the risks actually occur, our business, operating results, financial condition and prospects could be adversely affected. In that event, the market price of our Common Stock could decline, and you could lose part or all of your investment. References to “we,” “our,” or “us” generally refer to ESS, unless otherwise specified.*

### **Summary Risk Factors**

Our business is subject to numerous risks and uncertainties. The following is a summary of the principal risks we face:

- Our expectations for future operating and financial results and market growth rely in large part upon assumptions and analyses developed by us. If these assumptions or analyses prove to be incorrect, our actual operating results may be materially different from our anticipated results;
- We face significant barriers in our attempts to produce our energy storage products, our energy storage products are still under development, and we may not be able to successfully develop our energy storage products at commercial scale. If we cannot successfully overcome those barriers, our business will be negatively impacted and could fail;
- We are in the early stage of commercialization. In addition, certain aspects of our technology have not been fully field tested. If we are unable to develop our business and effectively commercialize our energy storage products as anticipated, we may not be able to generate revenues or achieve profitability;
- We depend on third-party suppliers for the development and supply of key raw materials and components for our energy storage products. In 2021 and 2020, we saw significant disruptions to key supply chains, shipping times, manufacturing times, and associated costs;
- Continued delays in our supply chain or the inability to procure needed raw materials and components could further harm our ability to manufacture and commercialize our energy storage products;
- We may experience delays, disruptions, or quality control problems in our manufacturing operations;
- Our ability to expand depends on our ability to hire, train and retain an adequate number of manufacturing employees, in particular employees with the appropriate level of knowledge, background and skills;
- We have experienced disruption related to COVID-19, which continues to cause significant uncertainty;
- We may be unable to adequately control the costs associated with our operations and the components necessary to build our energy storage products, and if we are unable to reduce our cost structure and effectively scale our operations in the future, our ability to become profitable may be impaired;
- We rely on complex machinery for our operations, and the production of our iron flow batteries involves a significant degree of risk and uncertainty in terms of operational performance and costs;
- We have a history of losses and have to deliver significant business growth to achieve sustained, long-term profitability and long-term commercial success;

- Our warranty insurance provided by Munich Re is important to many potential customers. Should we be unable to maintain our relationship with Munich Re and be unable to find a similar replacement, demand for our products may suffer;
- Failure to deliver the benefits offered by our technology, or the emergence of improvements to competing technologies, could reduce demand for our energy storage products and harm our business;
- Our plans are dependent on the development of a market acceptance of our products and the development of a market for long-duration batteries;
- We may face regulatory challenges to or limitations on our ability to sell our Energy Centers and Energy Warehouses directly in certain markets. Expanding operations internationally could expose us to additional risks;
- If we fail to protect, or incur significant costs in defending, our intellectual property and other proprietary rights, then our business and results of operations could be materially harmed; and
- As we endeavor to expand our business, we will incur significant costs and expenses, which could outpace our cash reserves. Unfavorable conditions or disruptions in the capital and credit markets may adversely impact business conditions and the availability of credit.

The following risk factors apply to our business and operations. These risk factors are not exhaustive, and investors are encouraged to perform their own investigation with respect to our business, financial condition and prospects. We may face additional risks and uncertainties that are not presently known to us, or that we currently deem immaterial, which may also impair our business. The following discussion should be read in conjunction with the financial statements and notes to the financial statements included elsewhere in this Annual Report on Form 10-K.

### **Risks Related to Our Technology, Products and Manufacturing**

***Our expectations for future operating and financial results and market growth rely in large part upon assumptions and analyses developed by us. If these assumptions or analyses prove to be incorrect, our actual operating results may be materially different from our anticipated results.***

We operate in rapidly changing and competitive markets and our expectations for future performance are subject to the risks and assumptions made by management with respect to our industry. Operating results are difficult to predict because they generally depend on our assessment of the timing of adoption of our technology and energy storage products, which is uncertain. Expectations for future performance are also subject to significant economic, competitive, industry and other uncertainties and contingencies, all of which are difficult or impossible to predict and many of which are beyond our control, and subsequent developments may affect such expectations. As discussed further elsewhere in this Annual Report on Form 10-K, any future sales and related future cash flows may not be realized in full or at all. Furthermore, our planned expansion into new revenue streams such as franchising opportunities for our energy storage products may never be realized or achieve commercial success, whether because of lack of market adoption of our energy storage products, competition or otherwise. Important factors that may affect the actual results and cause our operating and financial results and market growth expectations to not be achieved include risks and uncertainties relating to our business, industry performance, the regulatory environment, general business and economic conditions and other factors described under the section entitled “Cautionary Note Regarding Forward-Looking Statements” in this Annual Report on Form 10-K.

In addition, expectations for future performance also reflect assumptions that are subject to change and do not reflect revised prospects for our business, changes in general business or economic conditions or any other transaction or event that has occurred or that may occur and that was not previously anticipated. In addition, long-term expectations by their nature become less predictive with each successive year. There can be no assurance that our future financial condition or results of operations will be consistent with our expectations or with the expectations of investors or securities research analysts, which may cause the market price of our Common Stock to decline. If actual results differ materially from our expectations, we may be required to make adjustments in our business operations that may have a material adverse effect on our financial condition and results of operations.

***We face significant barriers in our attempts to produce our energy storage products, our energy storage products are still under development, and we may not be able to successfully develop our energy storage products at commercial scale. If we cannot successfully overcome those barriers, our business will be negatively impacted and could fail.***

Producing long-duration iron flow batteries that meet the requirements for wide adoption by commercial and utility-scale energy storage applications is a difficult undertaking. We are still in the early stage of commercialization and face significant challenges in completing the development of our containerized energy storage products and in producing our energy storage products in commercial volumes. We are currently in pre-production for our second-generation S200 iron flow battery design, which will be incorporated into our Energy Warehouses and Energy Centers. Some of the development

challenges that could prevent the introduction of our iron flow batteries include difficulties with (i) increasing the volume, yield, reliability and uniformity of the porous polyethylene separators and cells housed within the power module of our batteries, (ii) increasing the size and layer count of the multi-layer cells within the power module of our batteries, (iii) increasing manufacturing capacity to produce the volume of cells needed for our energy storage products, (iv) installing and optimizing higher volume manufacturing equipment, (v) packaging our batteries to ensure adequate cycle life, (vi) cost reduction, (vii) the completion of rigorous and challenging battery safety testing required by our customers or partners, including but not limited to, performance, life and abuse testing and (viii) the development of the final manufacturing processes.

Our Energy Warehouses are in the development stage. As of December 31, 2021, we did not have any second-generation S200 iron flow batteries deployed and there may be significant yield, cost, performance and manufacturing process challenges to be solved prior to commercial production and use. We are likely to encounter engineering challenges as we increase the dimensions, reduce the thickness and increase the volume of our batteries. If we are not able to overcome these barriers in developing and producing our iron flow batteries, our business could fail.

Our second-generation energy storage products and S200 batteries are manufactured on our first-generation (“Gen I”) automation line. The Gen I automation line requires qualified labor to inspect the parts to ensure proper assembly. Lack of qualified labor to inspect our assemblies may slow our production and impact our production costs and schedule. We have commissioned third parties to develop more sophisticated automation lines to minimize the required skilled labor, however, delays in production and delivery of the new second-generation manufacturing line are not in our control. If we experience delivery or installation delays under our customer contracts, we could experience order cancellations and lose business.

Even if we complete development and achieve volume production of our iron flow batteries, if the cost, performance characteristics or other specifications of the batteries fall short of our targets, our sales, product pricing and margins would likely be adversely affected.

***We are in the early stage of commercialization. In addition, certain aspects of our technology have not been fully field tested. If we are unable to develop our business and effectively commercialize our energy storage products as anticipated, we may not be able to generate revenues or achieve profitability.***

The growth and development of our operations will depend on the successful commercialization and market acceptance of our energy storage products and our ability to manufacture products at scale while timely meeting customers’ demands. There is no certainty that, once shipped, our products will operate as expected, and we may not be able to generate sufficient customer confidence in our latest designs and ongoing product improvements. There are inherent uncertainties in our ability to predict future demand for our energy storage products and, as a consequence, we may have inadequate production capacity to meet demand, or alternatively, have excess available capacity. Our inability to predict the extent of customer adoption of our proprietary technologies in the already-established traditional energy storage market makes it difficult to evaluate our future prospects.

As of December 31, 2021, we did not have any second-generation products fully deployed and we had not yet met revenue recognition criteria, but we began shipping our second-generation Energy Warehouses in the third quarter of 2021 and were in the process of installing and commissioning such units. Any significant problems in the production process could result in unplanned increases to production costs and production delays. In addition, although we believe our iron flow battery technology is field tested and ready for sale, there are no assurances that our proprietary technologies, such as our Proton Pump, will operate as expected and with consistency. Our Energy Center product is still being developed and has not been completely designed or produced. In addition, certain operational characteristics of our Energy Warehouse or Energy Center products with S200 batteries, such as cyclability with no degradation, have never been witnessed in the field. If our batteries are damaged during shipment, we may be required to replace such units. Once our Energy Warehouse or Energy Center products with S200 batteries are installed and used, we may discover further aspects of our technology that require improvement. Any significant improvement needed to our technology could delay existing contracts and new sales, result in order cancellations and negatively impact the market’s acceptance of our technology. If we experience significant delays or order cancellations, or if we fail to develop and install our energy storage products in accordance with contract specifications, then our operating results and financial condition could be adversely affected. In addition, there is no assurance that if we alter or change our energy storage products in the future, that the demand for these new products will develop, which could adversely affect our business and any possible revenues. If our energy storage products are not deemed desirable and suitable for purchase and we are unable to establish a customer base, we may not be able to generate revenues or attain profitability.

***We depend on third-party suppliers for the development and supply of key raw materials and components for our energy storage products. We also depend on vendors for the shipping of our energy storage products. Continued delays in our***

***supply chain and shipments could further harm our ability to manufacture and commercialize our energy storage products.***

We depend on third-party suppliers for the development and supply of key raw materials and components for our energy storage products, including power module components (e.g., bipolar plates, frames, end plates and separators), shipping containers and chemicals. We will need to maintain and significantly grow our access to key raw materials and control our related costs. We use various raw materials and components to construct our energy storage products, including polypropylene, iron and potassium chloride, that are critical to our manufacturing process. We also rely on third-party suppliers for injected molded parts, and power electronics suppliers must undergo a qualification process, which takes four to 12 months.

The cost of electronic components for our iron flow batteries, whether manufactured by our suppliers or by us, depends in part upon the prices and availability of raw materials. In recent periods, we have seen an increase in costs for a wide range of materials and components. Additionally, supply chain disruptions and access to materials have impacted our vendors and suppliers' ability to deliver materials and components to us in a timely manner. In 2020 and 2021, we saw significant disruptions to key supply chains, shipping times, shipping availability, manufacturing times, and associated costs, both with respect to the sourcing of supplies and the delivery of our products. We experienced and continue to experience delays to deliveries, vendor quality issues, as well as increases in our supply costs of many of our key components, including polypropylene, resin, power electronics, circuit board components and shipping containers. We expect such delays to continue in 2022. It is also possible that the semiautomated and automated production lines that we have contracted for the second quarter of 2022 and the fourth quarter of 2022, respectively, may also face delays in delivery and/or installation due to similar supply chain issues. If these issues persist, they may further delay our ability to produce our products and to recognize revenue, particularly for our larger scale Energy Center products (see also "*Part II. Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations—Components of Results of Operations—Revenue*"). Any delay or impediment to our ability to recognize revenue for any given period could materially adversely affect our results of operations and the market price of our Common Stock.

We expect prices for these materials to continue to fluctuate and their available supply may be unstable, depending on market conditions and global demand for these materials, including as a result of increased global production of batteries and energy storage products. For example, our Proton Pump is manufactured with certain raw materials, which not only include precious and non-precious metals but also carbon, graphite and thermoplastics, the prices of which have historically fluctuated on a cyclical basis and depend on a variety of factors over which we have no control. We have also experienced increased prices and/or inconsistent quality and supply of other electrical components and power module components including frames, end plates and separators. Any reduced availability of these materials may impact our access to cells and any further increases in their prices may reduce our profitability if we cannot recoup the increased costs through increased prices for our products. In addition, we utilize shipping containers to house our iron flow batteries within our Energy Warehouses and Energy Centers. Recent shipping delays caused by various economic, weather and COVID-19 pandemic effects have created a shortage in shipping containers and other supply chain delays. We have limited visibility into these supply chain disruptions and increased shipping container costs. Given that our energy storage products rely on the availability of shipping containers, such shortages may reduce our profitability if we are not able to pass the increased costs to our customers. Moreover, any such attempts to increase product prices may harm our brand, prospects and operating results.

In addition, the conflict between Russia and Ukraine could lead to disruption, instability and volatility in global markets and industries that could negatively impact our operations and our supply chain. The U.S. government and other governments have already imposed severe sanctions and export controls against Russia and Russian interests and may yet impose additional sanctions and controls. The impact of these measures, as well as potential responses to them by Russia, is currently unknown and they could adversely affect our business, supply chain, partners or customers.

We depend on third-party vendors for the shipping of our energy storage products. Recent conditions have also created disruptions in the logistics sector making it more challenging to find trucks to ship our products. The failure to deliver our products in a timely fashion or within budget may also harm our brand, prospects and operating results.

***We do not know whether we will be able to maintain long-term supply relationships with our critical suppliers, or secure new long-term supply relationships on terms that will allow us to achieve our objectives, if at all.***

We continually evaluate new suppliers, and we are currently qualifying several new suppliers. However, there are a limited number of suppliers for some of the key components of our products and we have, to date, fully qualified only a very limited number of such suppliers. Therefore, we have limited flexibility in changing suppliers. For example, we currently only have one supplier of bipolar plates, which is a critical component of our iron flow batteries. This vendor is limited to supplying approximately 16 battery stacks per week, which is sufficient for our immediate needs. However, we will need to find additional suppliers of bipolar plates in order to meet our manufacturing needs as we grow. In addition, we have had

issues with inconsistent quality and supply of other key power module components. We do not know whether we will be able to maintain long-term supply relationships with our critical suppliers, or secure new long-term supply relationships on terms that will allow us to achieve our objectives, if at all. A supplier's failure to develop and supply components in a timely manner or to supply components that meet our quality, quantity or cost requirements or our technical specifications, or our inability to obtain alternative sources of these components on a timely basis or on terms acceptable to us, could each harm our ability to manufacture and commercialize our energy storage products. In addition, to the extent the processes that our suppliers use to manufacture components are proprietary, we may be unable to obtain comparable components from alternative suppliers, all of which could harm our business, financial condition and results of operations.

In the long term, we intend to supplement electronic components from our suppliers by manufacturing them ourselves, which we believe will be more efficient, manufacturable at greater volumes and cost-effective than currently available electronic components. However, our efforts to develop and manufacture such electronic components have required and may require significant investments, and there can be no assurance that we will be able to accomplish this in the timeframes that we have planned or at all. If we are unable to do so, we may have to curtail our iron flow battery and energy storage product production or procure additional raw materials and electronic components from suppliers at potentially greater costs, either of which may harm our business and operating results.

***We may experience delays, disruptions, or quality control problems in our manufacturing operations.***

Our manufacturing and testing processes will require significant technological and production process expertise and modification to support our projected business objectives. Any change in our processes could cause one or more production errors, requiring a temporary suspension or delay in our production line until the errors can be researched, identified, and properly addressed and rectified. This may occur particularly as we introduce new products, modify our engineering and production techniques, and/or expand our capacity. In addition, our failure to maintain appropriate quality assurance processes could result in increased product failures, loss of customers, increased warranty reserves, increased production, and logistical costs and delays. Any of these developments could have a material adverse effect on our business, financial condition and results of operations.

***The ongoing COVID-19 pandemic has caused significant uncertainty in the United States and global economies as well as the markets we serve and could adversely affect our business, financial condition and results of operations.***

COVID-19 cases (including the spread of variants and mutant strains, such as the omicron variant) continue to surge in certain parts of the world and have resulted in authorities implementing numerous measures to contain the virus, including travel bans and restrictions, quarantines, shelter-in-place orders, and business limitations and shutdowns. We remain unable to accurately predict the full impact that COVID-19 will have on our results of operations, financial condition, liquidity and cash flows due to numerous uncertainties, including the duration and severity of the pandemic and containment measures. Our compliance with containment and mitigation measures materially impacted our day-to-day operations, and there can be no guaranty that the pandemic will not disrupt our business and operations or impair our ability to implement our business plan successfully.

To support the health and well-being of our employees, customers, partners and communities, in March 2020, we temporarily suspended operations at our Wilsonville, Oregon manufacturing facility, and also required all of our non-essential employees to work remotely. This represented approximately 20% of our workforce at the time. While we resumed operations in the manufacturing facility within several weeks, we instituted a split schedule shift, staggered workdays, and significant limitations on various areas of our physical building. In addition, we understand that the employees of many of our customers are working remotely, which may delay the timing of some orders as well as shipments and cash collections. There can be no guaranty that disruptions to our operations caused by COVID-19, such as staff not being allowed to enter our manufacturing facility in Wilsonville, Oregon or our supply chain being disrupted, will not result in further inefficiencies, delays and additional costs in our product development, sales, marketing, and customer service efforts that we cannot fully mitigate through remote or other alternative work arrangements.

More generally, the pandemic raises the possibility of an extended global economic downturn and has caused volatility in financial markets, which could affect demand for our products and services and impact our results and financial condition even after the pandemic is contained. For example, we may be unable to collect receivables from those customers significantly impacted by COVID-19. Also, a decrease in orders in a given period could negatively affect our revenues in future periods, particularly if experienced on a sustained basis. The pandemic may also have the effect of heightening many of the other risks described in these "Risk Factors", particularly those risks associated with our customers and supply chain.

***We may be unable to adequately control the costs associated with our operations and the components necessary to build our energy storage products, and if we are unable to reduce our cost structure and effectively scale our operations in the future, our ability to become profitable may be impaired.***

Our ability to become profitable in the future will not only depend on our ability to successfully market our iron flow batteries, Energy Centers and Energy Warehouses, but also to control costs to manufacture our iron flow batteries, Energy Centers, and Energy Warehouses. Our S100 battery stack design utilizes O-rings to seal against overboard and crossover leakage from iron plating reactions. This process was expensive with respect to materials, labor and quality compared to our second-generation S200 design. Our S200 battery stack design uses a glued-up design, eliminating the need for O-rings, which will ultimately result in a more reliable stack design and cost savings. However, we expect our costs to increase in the near term as we implement these design changes with our vendors. If we are unsuccessful in our cost-reduction plans or if we experience design or manufacturing defects or other failures of our S200 battery as result of these design changes, we could incur significant manufacturing and re-engineering costs. In addition, we will require significant capital to further develop and grow our business and expect to incur significant expenses, including those relating to research and development, raw material procurement, leases, sales and distribution as we build our brand and market our products, and general and administrative costs as we scale our operations. If we are unable to cost-efficiently design, manufacture, market, sell and distribute our energy storage products, our margins, profitability and prospects would be materially and adversely affected.

In addition, our Proton Pump is manufactured with certain raw materials, such as platinum, the prices of which have historically fluctuated on a cyclical basis and depend on a variety of factors over which we have no control. Substantial increases in the prices of raw materials would increase our operating costs and could adversely affect our profitability. The price of oil likewise fluctuates on a cyclical basis and may be subject to sustained cost pressure given geopolitical uncertainty, which in turn could affect the cost of making, distributing and transporting our products. If we are unable to pass any such increased costs to our customers, this could have a material adverse effect on our business, financial condition and results of operations.

In order to achieve our business plan, we must continue to reduce the manufacturing and development costs for our iron flow batteries, Energy Centers and Energy Warehouses to expand our market. Additionally, certain of our existing customer contracts were entered into based on projections regarding costs reductions that assume continued advances in our manufacturing and services processes that we may be unable to realize. The cost of components and raw materials, for example, could increase in the future, offsetting any successes in reducing our manufacturing costs. Any such increases could slow our growth and cause our financial results and operational metrics to suffer. In addition, we may face increases in our other expenses including increases in wages or other labor costs as well as installation, marketing, sales or related costs. In order to expand into new markets (especially markets in which the price of electricity from the grid is lower) we will need to continue to reduce our costs. Increases in any of these costs or our failure to achieve projected cost reductions could adversely affect our results of operations and financial condition and harm our business and prospects. If we are unable to reduce our cost structure in the future, we may not be able to achieve profitability, which could have a material adverse effect on our business and our prospects.

Further, we have not yet produced any iron flow batteries, Energy Warehouses or Energy Centers at volume and our expected cost advantage for the production of these products at scale, compared to conventional lithium-ion cells, will require us to achieve rates of throughput, use of electricity and consumables, yield, and rate of automation demonstrated for mature battery, battery material, and ceramic manufacturing processes, that we have not yet achieved. If we are unable to achieve these targeted rates, our business will be adversely impacted.

***We rely on complex machinery for our operations and the production of our iron flow batteries involves a significant degree of risk and uncertainty in terms of operational performance and costs.***

We rely heavily on complex machinery for our operations and the production of our iron flow batteries, and this equipment has not yet been qualified to operate at large-scale manufacturing. The work required to integrate this equipment into the production of our iron flow batteries is time intensive and requires us to work closely with the equipment provider to ensure that it works properly for our unique iron flow battery technology. This integration work will involve a significant degree of uncertainty and risk and may result in a delay in the scaling up of production or result in additional cost to our iron flow batteries.

Our manufacturing facilities will require large-scale machinery. Such machinery is likely to suffer unexpected malfunctions from time to time and will require repairs and spare parts to resume operations, which may not be available when needed. Unexpected malfunctions of our production equipment may significantly affect the intended operational efficiency or yield. Some examples would be inadequate bonding of the battery cells resulting in overboard or internal leakage, damage to the separator, or cracked bipolar or monopolar plates. In addition, because this equipment has never been used to build iron flow batteries, the operational performance and costs associated with this equipment can be difficult

to predict and may be influenced by factors outside of our control, such as, but not limited to, failures by suppliers to deliver necessary components of our energy storage products in a timely manner and at prices and volumes acceptable to us, environmental hazards and remediation, difficulty or delays in obtaining governmental permits, damages or defects in systems, industrial accidents, fires, seismic activity and other natural disasters.

Operational problems with our manufacturing equipment could result in the personal injury to or death of workers, the loss of production equipment, damage to manufacturing facilities, monetary losses, delays and unanticipated fluctuations in production. In addition, operational problems may result in environmental damage, administrative fines, increased insurance costs and potential legal liabilities. All of these operational problems could have a material adverse effect on our business, cash flows, financial condition or results of operations.

***Our future success depends in part on our ability to increase our production capacity, and we may not be able to do so in a cost-effective manner. If we elect to expand our production capacity by constructing one or more new manufacturing facilities, we may encounter challenges relating to the construction, management and operation of such facilities.***

In order to grow our business, we will need to increase our production capacity. For example, our current manufacturing capacity may not be sufficient to meet our planned 2022 production targets and we are currently seeking to expand our capacity. Our ability to plan, construct and equip additional manufacturing facilities is subject to significant risks and uncertainties, including but not limited to the following:

- The expansion or construction of any manufacturing facilities will be subject to the risks inherent in the development and construction of new facilities, including risks of delays and cost overruns as a result of factors outside our control, which may include delays in government approvals, burdensome permitting conditions, and delays in the delivery or installation of manufacturing equipment and subsystems that we manufacture or obtain from suppliers, similar to or more severe than what we have experienced recently.
- In order for us to expand internationally, we anticipate entering into strategic partnerships, joint venture and licensing agreements that allow us to add manufacturing capability outside of the United States. Adding manufacturing capacity in any international location will subject us to new laws and regulations including those pertaining to labor and employment, environmental and export / import. In addition, any such expansion brings with it the risk of managing larger scale foreign operations.
- We may be unable to achieve the production throughput necessary to achieve our target annualized production run rate at our current and future manufacturing facilities.
- Manufacturing equipment may take longer and cost more to engineer and build than expected, and may not operate as required to meet our production plans.
- We may depend on third-party relationships in the development and operation of additional production capacity, which may subject us to the risk that such third parties do not fulfill their obligations to us under our arrangements with them.
- We may be unable to attract or retain qualified personnel.

If we are unable to expand our manufacturing facilities, we may be unable to further scale our business, which would negatively affect our results of operations and financial condition. We cannot provide any assurances that we would be able to successfully establish or operate our manufacturing facility in a timely or profitable manner, or at all, or within any expected budget for such a project. The construction of any such facility would require significant capital expenditures and result in significantly increased fixed costs. If we are unable to transition manufacturing operations to any such new facilities in a cost-efficient and timely manner, then we may experience disruptions in operations, which could negatively impact our business and financial results. Further, if the demand for our products decreases or if we do not produce the expected output after any such new facility is operational, we may not be able to spread a significant amount of our fixed costs over the production volume, thereby increasing our per product fixed cost, which would have a negative impact on our business, financial condition and results of operations.

In addition, if any of our partners suffer from capacity constraints, deployment delays, work stoppages or any other reduction in output, we may be unable to meet our delivery schedule, which could result in lost revenue and deployment delays that could harm our business and customer relationships. If the demand for our iron flow batteries, Energy Centers and Energy Warehouses or our production output decreases or does not rise as expected, we may not be able to spread a significant amount of our fixed costs over the production volume, resulting in a greater than expected per unit fixed cost, which would have a negative impact on our financial condition and our results of operations.

Our ability to expand our manufacturing capacity would also greatly depend on our ability to hire, train and retain an adequate number of manufacturing employees, in particular employees with the appropriate level of knowledge, background and skills. Should we be unable to hire such employees, our business and financial results could be negatively impacted.

***We have in the past and may be compelled in the future to undertake product recalls or take other actions, which could adversely affect our business, prospects, operating results, reputation and financial condition.***

We have in the past and may be compelled in the future to undertake product recalls. For example, in the past we had to recall our Gen I battery modules due to vendors not properly manufacturing the parts to our specifications. Any quality issues can result in single module failures or can result in a cascade of numerous failures. Failures in the field can result in a single module replacement or may result in a total recall depending on the severity or contamination to the remainder of the system.

Any product recall in the future may result in adverse publicity, damage our reputation and adversely affect our business, financial condition and results of operations. In the future, we may, voluntarily or involuntarily, initiate a recall if any of our Energy Warehouses, Energy Centers, iron flow batteries, Proton Pump or components prove to be defective or noncompliant with applicable safety standards. Such recalls, whether caused by systems or components engineered or manufactured by us or our suppliers, would involve significant expense and diversion of management's attention and other resources, which could adversely affect our brand image in our target market and our business, financial condition and results of operations.

***Our relationship with SBE, an affiliate of SoftBank Group Corp., is subject to various risks which could adversely affect our business and future prospects. There are no assurances that we will be able to commercialize iron flow batteries from our joint development relationship with SBE. In addition, SBE has no obligation to order any energy storage products from us under the framework agreement, including at any price point.***

In April 2021, we signed a framework agreement, dated as of March 31, 2021, with SBE to supply our energy storage products to SBE in support of its market activities. Under this agreement, we have made various commitments to meet SBE's potential need for our energy storage products and are obligated to reserve a certain percentage of our manufacturing capacity to meet SBE's future needs, subject to periodic reviews of its firm and anticipated orders, which may negate those capacity reservations if no firm demand is realized. However, SBE is under no obligation to place any firm orders with us at any price point, and any future orders may be subject to future pricing or other commercial or technical negotiations, which we may not be able to satisfy, resulting in a diminished potential value of this relationship to us. To date, no orders have been placed under the framework agreement.

SBE, and any other business partners in the future, may have economic, business or legal interests or goals that are inconsistent with our goals. Any disagreements with SBE or other future business partners may impede our ability to maximize the benefits of these partnerships and slow the commercialization of our iron-flow batteries. Future commercial or strategic counterparties may require us, among other things, to pay certain costs or to make certain capital investments or to seek their consent to take certain actions. In addition, if SBE is unable or unwilling to meet its economic or other obligations under our partnership arrangements, we may be required to fulfill those obligations alone. These factors could result in a material adverse effect on our business and financial results.

***The execution of our strategy to expand into new markets through strategic partnerships, joint ventures and licensing arrangements is in a very early stage and is also subject to various risks which could adversely affect our business and future prospects.***

We may enter into strategic partnerships, joint ventures and licensing arrangements to expand our business and enter into new markets. However, we currently have no such arrangements in place and there is no assurance that we will be able to consummate any such arrangements as contemplated to commercialize our energy storage products. For example, we may enter into the Australian market through a joint venture to be formed with the purpose of manufacturing, distributing and operating our energy storage products in the region. We are currently in discussions with a potential joint venture partner that will include building manufacturing facilities. However, there can be no assurance that we will be able to enter into a binding agreement or agree to pricing or other terms that are financially beneficial or otherwise not unfavorable for us. If we are unsuccessful in securing a joint venture arrangement, we will need to find an alternative plan to enter the Australian market. Even if we are able to successfully secure a joint venture arrangement in Australia, there can be no assurance that we will be able to complete the development of manufacturing facilities and successfully manufacture, distribute and operate our energy storage products in that region.

Any future strategic partnerships, joint ventures or licensing arrangements may require us, among other things, to pay certain costs, make certain capital investments or to seek the partner's consent to take certain actions. In addition, if a partner is unable or unwilling to meet its economic or other obligations under the respective arrangements, we may be

required to either fulfill those obligations alone to ensure the ongoing success of, or to dissolve and liquidate, the partnership, joint venture or licensing arrangement. These factors could result in a material adverse effect on our business, prospects and financial results.

### **Risks Related to Our Business and Industry**

***We have a history of losses and have to deliver significant business growth to achieve sustained, long-term profitability and long-term commercial success.***

We had net losses on a GAAP basis in each fiscal year since our inception. For the years ended December 31, 2021 and 2020, we had \$477.1 million and \$30.4 million in net losses, respectively. In order to achieve profitability as well as long-term commercial success, we must continue to execute our plan to expand our business, which will require us to deliver on our existing global sales pipeline in a timely manner, increase our production capacity, reduce our manufacturing costs, competitively price and grow demand for our products, and seize new market opportunities by leveraging our proprietary technology and our manufacturing processes for novel solutions and new products. Failure to do one or more of these things could prevent us from achieving sustained, long-term profitability.

As we transition from our research and development phase and into a full commercial phase, we expect, based on our sales pipeline, to grow revenues. However, our revenue may not grow as expected for a number of reasons, many of which are outside of our control, including a decline in global demand for iron flow battery storage products, increased competition, or our failure to continue to capitalize on growth opportunities. If we are not able to generate and grow revenue and raise the capital necessary to support our operations, we may be unable to continue as a going concern.

***Our energy storage products are still under development, and there is no assurance nonbinding pre-orders will be converted into binding orders or sales.***

Our business model is focused on building relationships with large customers. To date, we have engaged in limited marketing activities and we have only a limited number of contracts with customers. Our energy storage products are still subject to ongoing development and until the time that the design and development of our energy storage products is complete and is commercially available for purchase, and until we are able to scale up our marketing function to support sales, there will be uncertainty as to customer demand for our energy storage products. In particular, demand for our energy storage products by independent energy developers will depend upon a bankability determination by institutional sources of project finance capital and that determination may be difficult to obtain. The potentially long wait from the time an order is made until the time our energy storage products are delivered, and any delays beyond expected wait times, could also impact user decisions on whether to ultimately make a purchase. There is no assurance that nonbinding pre-orders will be converted into binding orders or sales. Even if we are able to obtain binding orders, customers may limit their volume of purchases initially as they assess our products and whether to make a broader transition to our energy storage products. This may be a long process and will depend on the safety, reliability, efficiency and quality of our energy storage products, as well as the support and service that we offer. It will also depend on factors outside of our control, such as general market conditions, that could impact customer buying decisions. As a result, there is significant uncertainty regarding demand for our energy storage products and the pace and levels of growth that we will be able to achieve.

***For the year ended December 31, 2020, our independent registered public accounting firm included an explanatory paragraph relating to our ability to continue as a going concern in its report on our audited financial statements.***

The report from our independent registered public accounting firm for the year ended December 31, 2020 included an explanatory paragraph stating that ESS' recurring losses from operations and cash outflows from operating activities raised substantial doubt about our ability to continue as a going concern. ESS' 2020 financial statements do not include any adjustments that may result from the outcome of this uncertainty and do not reflect the transactions as a result of the Business Combination.

Future reports from our independent registered public accounting firm could contain statements expressing substantial doubt about our ability to continue as a going concern. If there remains substantial doubt about our ability to continue as a going concern, investors or other financing sources may be unwilling to provide additional funding to us on commercially reasonable terms, or at all, and our business may be harmed. If we are unable to continue as a going concern, we may have to liquidate our assets and may receive less than the value at which those assets are carried on our audited financial statements, and it is likely that investors would lose part or all of their investment.

***Our warranty insurance provided by Munich Re is important to many potential customers. Should we be unable to maintain our relationship with Munich Re and be unable to find a similar replacement, demand for our products may suffer.***

Our business is substantially dependent on our relationship with Munich Re. Our warranty insurance provided by Munich Re is important to many potential customers, and such warranty insurance is a bespoke product not widely offered by multiple insurers. There is no assurance that we will be able to maintain our relationship with Munich Re. If Munich Re

terminates or significantly alters its relationship with us in a manner that is adverse to our company, our business would be materially adversely affected. Similarly, if we are unable to maintain our relationship with Munich Re, or if our arrangement with Munich Re is modified so that the economic terms become less favorable to us, we may be unable to find a similar replacement warranty insurance and our business would be materially adversely affected.

***Failure to deliver the benefits offered by our technology, or the emergence of improvements to competing technologies, could reduce demand for our energy storage products and harm our business.***

We believe that, compared to lithium-ion batteries, our energy storage solutions offer significant benefits, including using widely-available, low-cost materials with no rare mineral components, being substantially recyclable at end-of-life, having an approximately twenty-five year product life requiring minimal maintenance, and having a wide thermal operating range that eliminates the need for fire suppression and heating, ventilation and air conditioning equipment, which would otherwise be required for use with lithium-ion batteries.

However, if our manufacturing costs increase, or if our expectations regarding the operation, performance, maintenance and disposal of our energy storage products are not realized, then we could have difficulty marketing our energy storage products as a superior alternative to already-established technologies and impact the market reputation and adoptability of our energy storage products.

We also currently market our energy storage products as having superior cyclability to other energy storage solutions on the market. However, in general, flow batteries have suffered challenges running multiple cycles over their lifetime without experiencing degradation in storage capacity and, in particular, our iron flow batteries have failed at cycling reliably in the past and may fail or have issues cycling in the future if our technology does not operate as expected. If our technology is inadequate or our energy storage solutions fail to operate as expected or designed, our business, financial condition and results of operations would be adversely affected.

In addition, developments of existing and new technologies could improve the cost and usability profile of such alternative technologies, reducing any relative benefits currently offered by our energy storage products, which would negatively impact the likelihood of our energy storage products gaining market acceptance.

***Our plans are dependent on the development of a market acceptance of our products and the development of a market for long-duration batteries.***

Our plans are dependent upon market acceptance of our products. Iron flow batteries represent an emerging market, and we cannot be sure that potential customers will accept iron flow batteries as a replacement for traditional power sources. In particular, traditional lithium-ion batteries, which are already produced on a large global scale and have widespread market acceptance, offer higher power density and round-trip efficiency than our iron flow batteries. If customers were to place greater value on power density and round-trip efficiency over what we believe to be the numerous other advantages of our technology, then we could have difficulty positioning our iron flow batteries as a viable alternative to traditional lithium-ion batteries and our business would suffer.

As is typical in a rapidly evolving industry, demand and market acceptance for recently introduced products and services are subject to a high level of uncertainty and risk. It is difficult to predict with certainty the size of the energy storage market and its growth rate. The development of a market for our products may be affected by many factors that are out of our control, including:

- the cost competitiveness of our products including availability and output expectations and total cost of ownership;
- the future costs associated with renewable energies;
- perceived complexity and novelty of our technology and customer reluctance to try a new product;
- the market for energy storage solutions and government policies that affect those markets;
- government incentives, mandates or other programs favoring zero carbon energy sources;
- local permitting and environmental requirements;
- customer preference for lithium-ion based technologies, including but not limited to the power density offered by lithium-ion batteries; and
- the emergence of newer, more competitive technologies and products.

If a sufficient market fails to develop or develops more slowly than we anticipate, we may be unable to recover the losses we will have incurred in the development of our products, and we may never achieve profitability.

***Our future growth and success depend on our ability to sell effectively to large customers.***

Many of our potential customers are electric utilities, and C&I businesses that tend to be large enterprises. Therefore, our future success will depend on our ability to effectively sell our products to such large customers. Sales to these end-customers involve risks that may not be present (or that are present to a lesser extent) with sales to smaller customers. These risks include, but are not limited to, (i) increased purchasing power and leverage held by large customers in negotiating contractual arrangements with us and (ii) longer sales cycles and the associated risk that substantial time and resources may be spent on a potential end customer that elects not to purchase our solutions.

Large organizations often undertake a significant evaluation process that results in a lengthy sales cycle. In addition, product purchases by large organizations are frequently subject to budget constraints, multiple approvals and unanticipated administrative, processing and other delays. Finally, large organizations typically have longer implementation cycles, require greater product functionality and scalability, require a broader range of services, demand that vendors take on a larger share of risks, require acceptance provisions that can lead to a delay in revenue recognition and expect greater payment flexibility. All of these factors can add further risk to business conducted with these potential customers.

***If we are unable to establish and maintain confidence in our long-term business prospects among developers, utilities and others within our industry, then our business, financial condition and results of operations may suffer materially.***

Commercial utilities may be less likely to purchase our products now if they are not convinced that our business will succeed or that our operations will continue for many years. Similarly, suppliers and other third parties will be less likely to invest time and resources in developing business relationships with us if they are not convinced that our business will succeed. Accordingly, to build, maintain and grow our business, we must maintain confidence among commercial utilities, suppliers, analysts and other parties with respect to our liquidity and long-term business prospects. Maintaining such confidence may be particularly complicated by certain factors, such as our limited operating history, others' unfamiliarity with our products, competition and uncertainty regarding the future of energy storage solutions. Many of these factors are largely outside our control, and any negative perceptions about our long-term business prospects or the renewable energy sector as a whole, even if exaggerated or unfounded, would likely harm our business and make it more difficult to raise capital in the future.

***Our project awards and sales pipeline may not convert to contracts, which may have a material adverse effect on our revenue and cash flows.***

We expect a significant portion of the business that we will seek in the foreseeable future will be awarded through competitive bidding against other energy storage technologies and other forms of power generation. The competitive bidding process involves substantial costs and a number of risks, including the significant cost and managerial time to prepare bids and proposals for contracts that may not be awarded to us and our failure to accurately estimate the resources and costs that will be required to fulfill any contract we win. In addition, following a contract award, we may encounter significant expense, delay or contract modifications or award revocation as a result of our competitors protesting or challenging contracts awarded to us in competitive bidding. Our failure to compete effectively in this procurement environment could adversely affect our revenue and/or profitability.

Some of the project awards we receive and orders we accept from customers require certain conditions or contingencies (such as permitting, interconnection, financing or regulatory approval) to be satisfied, some of which are outside of our control. Certain awards are cancellable or revocable at any time prior to contract execution. The time periods from receipt of an award to execution of a contract, or receipt of a contract to installation may vary widely and are determined by a number of factors, including the terms of the award, governmental policies or regulations that go into effect after the award, the terms of the customer contract and the customer's site requirements. These same or similar conditions and contingencies may be required by financiers in order to draw on financing to complete a project. If these conditions or contingencies are not satisfied, or changes in laws affecting project awards occur, or awards are revoked or cancelled, project awards may not convert to contracts, and installations may be delayed or canceled. This could have an adverse impact on our revenue and cash flow and our ability to complete construction of a project.

***Our contracted sales are subject to the risk of termination by the contracting party.***

The majority of our commercial contracts contain provisions which allow the customer to terminate an agreement if certain conditions are not met or for extended force majeure (which could include inability to perform due to COVID-19). We have issued several force majeure notices to customers as a result of delays caused by COVID-19 and the impact of COVID-19 on such agreements, or the applicable agreements' termination provisions, is uncertain and could result in the termination of such agreements. In addition, certain of our contracts can be terminated simply for convenience. If a contracted sale were to be terminated, it could have an adverse impact on our revenues, longer term potential and market reputation, which would have an even greater impact on our ability to achieve future sales.

***Our limited operating history makes it difficult for us to evaluate our future business prospects.***

We are a company with a limited operating history. As we continue the transition from research and development activities to commercial production and sales, it is difficult, if not impossible, to forecast our future results, and we have limited insight into trends that may emerge and affect our business. The estimated costs and timelines that we have developed to reach full scale commercial production are subject to inherent risks and uncertainties involved in the transition from a start-up company focused on research and development activities to the large-scale manufacture of Energy Warehouses and sale of our Energy Centers and Energy Warehouses. Market conditions, many of which are outside of our control and subject to change, including general economic conditions, the availability and terms of financing, the impacts and ongoing uncertainties created by the COVID-19 pandemic, fuel and energy prices, regulatory requirements and incentives, competition and the pace and extent of flow battery products generally, will impact demand for our Energy Centers and Energy Warehouses, and ultimately our success.

***We may not be able to accurately estimate the future supply and demand for our batteries, which could result in a variety of inefficiencies in our business and hinder our ability to generate revenue. If we fail to accurately predict our manufacturing requirements, we could incur additional costs or experience delays.***

It is difficult to predict our future revenues and appropriately budget for our expenses, and we may have limited insight into trends that may emerge and affect our business. We anticipate being required to provide expectations of our demand to our current and future suppliers prior to the scheduled delivery of products to potential customers. Currently, there is no historical basis for making judgments on the demand for our iron flow batteries or our ability to develop, manufacture, and deliver iron flow batteries, or our profitability in the future. If we overestimate our requirements, our suppliers may have excess inventory, which indirectly would increase our costs. If we underestimate our requirements, our suppliers may have inadequate inventory, which could interrupt manufacturing of our products and result in delays in shipments and revenues. In addition, lead times for materials and components that our suppliers order may vary significantly and depend on factors such as the specific supplier, contract terms and demand for each component at a given time. If we fail to order sufficient quantities of product components in a timely manner, the delivery of batteries to our potential customers could be delayed, which would harm our business, financial condition and results of operations.

***If we fail to manage our growth effectively, we may be unable to execute our business plan, maintain high levels of customer service, or adequately address competitive challenges.***

We have experienced significant growth in customer contracts in recent periods and intend to continue to expand our business significantly within existing and new markets. This growth has placed, and any future growth may place, a significant strain on our management, operational, and financial infrastructure. In particular, we will be required to expand, train, and manage our growing employee base and scale and otherwise improve our information technology (“IT”) infrastructure in tandem with that headcount growth. Our management will also be required to maintain and expand our relationships with customers, suppliers, and other third parties and attract new customers and suppliers, as well as manage multiple geographic locations.

Our current and planned operations, personnel, customer support, IT, information systems, and other systems and procedures might be inadequate to support future growth and may require us to make additional unanticipated investment in our infrastructure. Our success and ability to scale our business will depend, in part, on our ability to manage these changes in a cost-effective and efficient manner. If we cannot manage our growth, then we may be unable to take advantage of market opportunities, execute our business strategies, or respond to competitive pressures. This could also result in declines in quality or customer satisfaction, increased costs, difficulties in introducing new offerings, or other operational difficulties. Any failure to effectively manage growth could adversely impact our business and reputation.

***Utility companies may resist the adoption of our products and could impose customer fees or interconnection requirements on our customers that could make our products less desirable.***

Investor-owned utilities may resist adoption of our Energy Warehouses and Energy Centers as they are disruptive to the utility business model that primarily utilizes large central generation power plants and associated transmission and distribution. On-site energy storage that is on the customer-side of the electric meter competes with the utility. Energy storage on the utility-side of the meter generally has power output that is significantly less than central generation power plants and may be perceived by the utility as too small to materially impact its business, limiting its interest. Utilities have a regulatory mandate to ensure the reliability of the grid, and accordingly, perceived technology risk may limit utility interest in iron flow batteries. Finally, long-duration energy storage is supportive of, and even necessary for, increased penetration of renewable energy sources on the electric grid, a goal not all utilities support.

Utility companies commonly charge fees to larger, industrial customers for disconnecting from the electric grid or for having the capacity to use power from the electric grid for back up purposes. These fees could increase the cost to our

customers of using our energy storage products and could make our products less desirable, thereby harming our business, financial condition and results of operations.

***We have signed product sales contracts and expect to enter into long-term service agreements with customers subject to contractual, technology, operating and commodity risks as well as market conditions that may affect our operating results.***

We expect to enter into long-term service agreements with certain customers to provide service on our energy storage products with terms of up to 25 years. Under the provisions of these contracts, we will provide services to maintain, monitor, and repair our energy storage products to meet minimum operating levels. While we have conducted tests to determine the overall life of our energy storage products, we have not run certain of our energy storage products over their projected useful life or in all potential conditions prior to large scale commercialization. As a result, we cannot be sure that these energy storage products will last to their expected useful life or perform as anticipated in all conditions, which could result in warranty claims, performance penalties, maintenance, on-going servicing and module replacement costs and/or a negative perception of our energy storage products. Our ability to proceed with projects under development and complete construction of projects on schedule and within budget may be adversely affected by escalating costs for materials, tariffs, labor and regulatory compliance, inability to obtain necessary permits, interconnections or other approvals on acceptable terms or on schedule and by other factors. If any development project or construction is not completed, is delayed or is subject to cost overruns, we could become obligated to make delay or termination payments or become obligated for other damages under contracts, experience diminished returns or write off all or a portion of our capitalized costs in the project. Each of these events could have an adverse effect on our business, financial condition and results of operations. We currently face and will continue to face significant competition, including from products using other energy sources that may be lower priced or have preferred environmental characteristics.

We compete on the basis of our energy storage products' reliability, efficiency, environmental sustainability and cost. Technological advances in alternative energy products, improvements in the electric grid or other sources of power generation, or new battery technologies or market entrants may negatively affect the development or sale of some or all of our energy storage products or make our energy storage products less economically attractive, non-competitive or obsolete prior to or after commercialization. Significant decreases in the price of alternative technologies, or significant increases in the price of the materials we use to build our energy storage products could have a material adverse effect on our business because other generation sources could be more economically attractive to consumers than our energy storage products.

***We may not succeed in establishing, maintaining and strengthening our brand, which would materially and adversely affect customer acceptance of our products and our business, revenues and prospects.***

Our business and prospects heavily depend on our ability to develop, maintain and strengthen our brand. If we are not able to establish, maintain and strengthen our brand, we may lose the opportunity to build a critical mass of customers. Our ability to develop, maintain and strengthen our brand will depend heavily on the success of our marketing efforts. The utility industry is intensely competitive, and we may not be successful in building, maintaining and strengthening our brand. Our current and potential competitors, particularly lithium-ion battery technology suppliers owned by or promoted by electric vehicle automobile manufacturers headquartered in the United States, Japan, the European Union and China, have greater name recognition, broader customer relationships and substantially greater marketing resources than we do. If we do not develop and maintain a strong brand, our business, financial condition and results of operations will be materially and adversely impacted.

Other companies, some of which have substantially greater resources than ours, are currently engaged in the development of products and technologies that are similar to, or may be competitive with, our products and technologies. Several companies in the United States are engaged in non-lithium-ion environmentally sustainable battery development, although we believe we are the only domestic company engaged in the manufacturing and deployment of stationary energy units storing and utilizing the iron flow battery. Other emerging flow battery solution technologies (and the companies developing them) include the vanadium flow storage technology (UniEnergy Technologies LLC and Invinity Energy Systems plc), the organic flow battery (JenaBatteries GmbH), the zinc-bromine hybrid flow battery (Primus Power), and the zinc-iron flow battery (Vizn Energy Systems, Inc.). Each of these competitors has the potential to capture market share in our target markets. There are also other potential competitors internationally that could capture market share.

***The loss of one or more members of our senior management team, other key personnel or our failure to attract additional qualified personnel may adversely affect our business and our ability to achieve our anticipated level of growth.***

We depend on the continued services of our senior management team, including our Chief Executive Officer, President, Chief Technology Officer and Chief Financial Officer, and other key personnel, each of whom would be difficult to replace. The loss of any such personnel, or the inability to effectively transition to their successors, could have a material

adverse effect on our business and our ability to implement our business strategy. All of our employees, including our senior management, are free to terminate their employment relationships with us at any time. Any changes to our senior management team, including hires or departures, could cause disruption to our business and have a negative impact on operating performance, while these operational areas are in transition.

Additionally, our ability to attract qualified personnel, including senior management and key technical personnel, is critical to the execution of our growth strategy. Competition for qualified senior management personnel and highly skilled individuals with technical expertise is extremely intense. We face and are likely to continue to face challenges identifying, hiring, and retaining qualified personnel in all areas of our business, and we can provide no assurance that we will find suitable successors as transitions occur. In addition, integrating new employees into our team, and key personnel in particular, could prove disruptive to our operations, require substantial resources and management attention, and ultimately prove unsuccessful. Our failure to attract and retain qualified senior management and other key technical personnel could limit or delay our strategic efforts, which could have a material adverse effect on our business, financial condition and results of operations.

***We are highly dependent on the services of Craig Evans, our President and Co-Founder, and Dr. Julia Song, our Chief Technology Officer and Co-Founder, who are married to each other. The separation or divorce of the couple in the future could adversely affect our business.***

We are highly dependent on the services of Craig Evans, our President and Co-Founder, and Dr. Julia Song, our Chief Technology Officer and Co-Founder, who are married to each other. If Mr. Evans or Dr. Song were to discontinue their service to us due to death, disability or any other reason, or if they were to become separated or divorced or could otherwise not amicably work with each other, we would be significantly disadvantaged. Alternatively, their work performance may not be satisfactory if they become preoccupied with issues relating to their personal situation. In these cases, our business could be materially harmed.

***If demand for energy storage solutions does not continue to grow or grows at a slower rate than we anticipate, our business and results of operations may be impacted.***

Our potential target customers include both utilities and C&I end users. Our potential customers are interested in several use cases including solar shifting, peak shaving, price arbitrage, utility ancillary services and microgrids. We cannot provide any assurances that utilities or C&I users will adopt our products as alternative energy storage solutions at levels sufficient to grow our business.

The viability and demand for our products may be affected by many factors outside of our control, including:

- cost competitiveness, reliability and performance of our products compared to lithium-ion products;
- levels of investment by end users of energy storage products, which may decrease when economic growth or energy demand slows resulting in a reduction in battery purchases generally;
- strength of the renewable energy industry and associated integration opportunities for our products;
- a favorable regulatory landscape, including: the upholding by the states in the United States of the Federal Energy Regulatory Commission's Order 841, which mandates that battery storage can participate in the demand response and ancillary markets; incentives for the implementation of battery storage by state regulators; and adoption by Congress of an investment tax credit for standalone battery storage; and
- the emergence, continuance or success of other alternative energy storage technologies and products.

If we do not manage these risks and overcome these potential difficulties outside of our control successfully, our business and results of operations may suffer.

***Our results of operations may fluctuate from quarter to quarter, which could make our future performance difficult to predict and could cause our results of operations for a particular period to fall below expectations, resulting in a decline in the price of our Common Stock.***

Our hardware takes many months to manufacture and prepare for delivery and any revenue in future periods may fluctuate based on underlying customer arrangements. Further, we expect our arrangements may have multiple deliverables and performance obligations and the amount and timing of recognizing revenue for those different performance obligations may vary which could cause our revenue to fluctuate. Our revenues also depend on a number of other factors, some of which are beyond our control, including the impact of supply chain issues (see also “—Risks Related to Our Technology, Products and Manufacturing—We depend on third-party suppliers for the development and supply of key raw materials and components for our energy storage products. We also depend on vendors for the shipping of our energy storage products. Continued delays in our supply chain and shipments could further harm our ability to manufacture and

commercialize our energy storage products.”). As a result, our quarterly results of operations are difficult to predict and may fluctuate significantly in the future.

***We will initially depend on revenue generated from a single product and in the foreseeable future will be significantly dependent on a limited number of products.***

We will initially depend on revenue generated initially from our Energy Warehouses and later on, our Energy Centers, and in the foreseeable future will continue to be significantly dependent on a limited number of products. Given that for the foreseeable future our business will depend on a limited number of products, to the extent our products are not well-received by the market, our sales volume, business, financial condition and results of operations would be materially and adversely affected.

***Our cost reduction strategy may not succeed or may be significantly delayed, which may result in our inability to achieve profitability.***

Our ability to successfully implement our overall business strategy relies on our ability to reduce development and manufacturing costs in the future. Our cost reduction strategy is based on the assumption that increases in production will result in economies of scale. In addition, our cost reduction strategy relies on advancements in our manufacturing process, global competitive sourcing, engineering design, reducing the cost of capital and technology improvements (including stack life and projected power output). Its successful implementation also depends on a number of factors, some of which are beyond our control, including the impact of inflation and the timely delivery of key supplies at reasonable prices. For example, our current supply imbalance may result in additional costs that exceed our current expectations. There is no assurance that our cost reduction strategy will be successful and failure to achieve our cost reduction targets could have a material adverse effect on our business, financial condition and results of operations.

***Our growth prospects depend on our ability to capitalize on market opportunities.***

We believe that a number of market opportunities could help fuel our growth prospects, including the following:

- the pervasiveness of electric grid congestion, creating an opportunity to deploy batteries to reduce the peak energy usage of a customer in specific locations where infrastructure constraints create a need for transmission and/or distribution upgrades;
- increasing demand for longer duration energy storage of more than four hours;
- global interest in achieving higher penetration of renewable energy such as wind and solar power, which are fluctuating in nature and dependent upon effective energy storage solutions;
- the demand for co-location of battery assets on solar or wind farms to store off-peak intermittent renewable energy production and provide on-peak energy at higher prices than alternative energy;
- utilities turning to energy storage as an alternative to expanded transmission;
- C&I end users’ adoption of alternative energy generation technologies to supplement or replace on-the-grid energy usage;
- microgrid expansion including for means of preventing wildfires in California and Australia; and
- the existence of various market mechanisms that would allow the owners and operators of our products to monetize their investments in our products, such as ancillary service markets, capacity markets and others.

If these expected market opportunities do not materialize, or if we fail to capitalize on them, then we may not be able to meet our growth projections.

***Our planned expansion into new geographic markets or new product lines or services could subject us to additional business, financial, and competitive risks.***

In the years ended December 31, 2021 and 2020, we entered into contracts and other agreements to sell our products in a number of different countries, including the United States, Chile, Spain, Belgium, Slovakia, and Australia. We have in the past, and may in the future, evaluate opportunities to expand into new geographic markets and introduce new product offerings and services that are a natural extension of our existing business. We also may from time to time engage in acquisitions of businesses or product lines with the potential to strengthen our market position, enable us to enter attractive markets, expand our technological capabilities, or provide synergy opportunities.

Our success operating in these new geographic or product markets, or in operating any acquired business, will depend on a number of factors, including our ability to develop solutions to address the requirements of the electric utility industry, renewable energy project developers and owners, and C&I end users, our timely qualification and certification of new

products, our ability to manage increased manufacturing capacity and production, and our ability to identify and integrate any acquired businesses.

Further, any additional markets that we may enter could have different characteristics from the markets in which we currently sell products, and our success will depend on our ability to adapt properly to these differences. These differences may include regulatory requirements, including tax laws, trade laws, foreign direct investment review regimes, labor regulations, tariffs, export quotas, customs duties, or other trade restrictions, limited or unfavorable intellectual property protection, international, political or economic conditions, restrictions on the repatriation of earnings, longer sales cycles, warranty expectations, product return policies and cost, performance and compatibility requirements. In addition, expanding into new geographic markets will increase our exposure to presently existing and new risks, such as fluctuations in the value of foreign currencies and difficulties and increased expenses in complying with United States and foreign laws, regulations and trade standards, including the Foreign Corrupt Practices Act of 1977, as amended (the “FCPA”).

Failure to develop and introduce these new products successfully into the market, to successfully integrate acquired businesses or to otherwise manage the risks and challenges associated with our potential expansion into new product and geographic markets, could adversely affect our revenues and our ability to sustain profitability.

***Our business and operations may be adversely affected by the novel coronavirus (COVID-19) outbreak or other similar outbreaks.***

Any outbreaks of contagious diseases, including the global COVID-19 pandemic, and other adverse public health developments in countries where we and our suppliers operate, could have a material and adverse effect on our business, financial condition and results of operations. These effects could include disruptions to or restrictions on our employees’ ability to travel, as well as temporary closures of our facilities or the facilities of our customers, suppliers, or other vendors in our supply chain. In addition, COVID-19 has resulted in a widespread health crisis that has adversely affected, and may continue to adversely affect, the economies and financial markets of many countries, resulting in an economic downturn that could affect demand for our products or our ability to obtain financing for our business or projects. COVID-19 may impact the health of our team members, directors or customers, reduce the availability of our workforce or those of companies with which we do business, or otherwise cause human impacts that may negatively impact our business. Any of these events, which may result in disruptions to our supply chain or customer demand, could materially and adversely affect our business and our financial results. The extent to which COVID-19 will impact our business and our financial results will depend on future developments, which are highly uncertain and cannot be predicted. Such developments may include the geographic spread of COVID-19, the severity of the disease, the duration of the outbreak, the actions that may be taken by various governmental authorities in response to the outbreak, such as quarantine or “shelter-in-place” orders and business closures imposed by various states within the United States, and the impact on the U.S. or global economy. For example, in March 2020, in response to the escalating global COVID-19 outbreak, we temporarily suspended operations at our Wilsonville, Oregon manufacturing facility, and also required those employees that could work from home to do so. While we resumed operations in the manufacturing facility within several weeks, we instituted a split schedule shift, staggered workdays, and significant limitations on various areas of our physical building. These changes all resulted in significant disruption to our business. Currently, we continue to evaluate our ability to operate in light of recent resurgences of COVID-19, including the emergence of new variant strains of COVID-19, which have and may in the future necessitate renewed government restrictions, and the advisability of continuing operations, based on federal, state and local guidance, evolving data concerning the pandemic and the best interests of our employees, customers and stockholders. Accordingly, there can be no assurance that any of our facilities will remain open (in full or in part), that our employees that continue to work remotely will return to the office or that our other operations will continue at full or limited capacity. If we again have to shut down production either due to a worsening of the COVID-19 pandemic or due to an outbreak in one of our facilities, our project schedules and associated financing could be adversely affected. An extended period of remote working by our employees could strain our technology resources and introduce operational risks, including heightened cybersecurity risk. Further, we have experienced, and may continue to experience, increased costs and expenses, including as a result of (i) conducting periodic “fitness-for-duty” assessments for employees, including symptom checks and providing personal protective equipment, (ii) the expansion of benefits to our employees, including the provision of additional time off for employees who have contracted COVID-19 or are required to be quarantined or who are unable to obtain childcare to return to work, (iii) implementing increased health and safety protocols at all of our facilities, including increased cleaning and sanitization of workspaces, restricting visitor access, mandating social distancing guidelines and increasing the availability of sanitization products, and (iv) the increased cost of personal protective equipment. Taken together, these material impacts to our business caused us to issue several Force Majeure notices for customers anticipating shipments of our product and may result in additional delays in fulfilling customer orders. Although we believe our business is currently considered an “essential” business in our operating markets, if any of the applicable exceptions or exemptions are curtailed or revoked in the future, or any of these exemptions or exceptions do not extend to any of our key suppliers, our business, financial condition and results of operations could be adversely

impacted. While we have attempted to continue business development activities during the pandemic, state and local shutdowns, shelter-in-place orders and travel restrictions have impeded our ability to meet with customers and solicit new business, and certain bids and solicitations in which we typically participate have been postponed. In addition, our supply chain is heavily dependent on key materials domestically and internationally, including from China. In 2020 and 2021, we saw significant disruptions to key supply chains, shipping times, shipping availability, manufacturing times, and associated costs, both with respect to the sourcing of supplies and the delivery of our products. These disruptions, delays, and increased costs can have a material impact to our business, operations, and financial condition and as a result, at this time, it is impossible to predict the overall impact of COVID-19 on our business, liquidity, capital resources, supply chain and financial results or its effect on clean energy demand, capital budgets of our customers, or demand for our products. Additionally, while we have continued to prioritize the health and safety of our team members and customers as we continue to operate during the pandemic, we face an increased risk of litigation related to our operating environments. Even after the COVID-19 pandemic has subsided, we may continue to experience adverse impacts to our business as a result of any economic recession that has occurred or may occur in the future because of the pandemic, or because the pandemic worsens again. Additional public health crises could also emerge in the future, including other pandemics or epidemics. Any such public health crisis could pose further risks to us and could also have a material adverse effect on our business, results of operations and financial position.

***There may be limitations on the effectiveness of our internal controls, and a failure of our control systems to prevent error or fraud may materially harm our company. We may identify material weaknesses in the future that may cause us to fail to meet our reporting obligations or result in material misstatements of our financial statements. If we fail to remediate any material weaknesses or if we otherwise fail to establish and maintain effective control over financial reporting, our ability to accurately and timely report our financial results could be adversely affected.***

In connection with the audits of the financial statements of Legacy ESS for the years ending December 31, 2019 and 2020, we identified two material weaknesses for Legacy ESS due to several deficiencies that were identified in the operating effectiveness of controls over (1) the identification and review of technical issues associated with research and development, raw materials purchase commitments and equity processes which resulted in adjustments to restate the 2019 financial statements and correct the 2020 financial statements; and (2) the review and analysis of certain transactions within Legacy ESS' financial statement close process. 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 financial statements will not be prevented or detected on a timely basis.

In addition, in preparing STWO's unaudited condensed consolidated financial statements as of and for the quarterly period ended September 30, 2021, our management concluded that our control around the interpretation and accounting for certain complex features of the Class A ordinary shares and warrants issued by STWO was not effectively designed or maintained. This material weakness resulted in the restatement of STWO's balance sheet as of September 21, 2020, its annual financial statements for the period ended December 31, 2020 and its interim financial statements for the quarters ended September 30, 2020, March 31, 2021 and June 30, 2021. Additionally, this material weakness could result in a further misstatement of the warrant liability, Class A ordinary shares and related accounts and disclosures that would result in a material misstatement of the financial statements that would not be prevented or detected on a timely basis.

Our management has concluded that these material weaknesses in Legacy ESS' internal control over financial reporting are due to the fact that, at the time, Legacy ESS was a private company with limited resources and did not have the necessary business processes and related internal controls formally designed and implemented coupled with the appropriate resources with the appropriate level of experience and technical expertise to oversee our business processes and controls. Our management has concluded that the material weaknesses in STWO's internal control over financial reporting involved difficulty identifying and appropriately applying complex accounting standards and requirements relating to equity and warrants issued in connection with STWO's initial public offering.

We have determined that we have remediated the material weakness for Legacy ESS related to the identification and review of technical issues associated with research and development, raw materials purchase commitments and equity processes which resulted in adjustments to restate the 2019 financial statements and correct the 2020 financial statements and the material weakness related to STWO as of December 31, 2021. The second material weakness for Legacy ESS related to the operating effectiveness of controls over the review and analysis of certain transactions within ESS' financial statement close process remains unremediated. Therefore, our principal executive officer and principal financial officer have concluded that the Company's disclosure controls and procedures were not effective as of December 31, 2021.

We have begun to take steps to remediate the remaining identified unremediated material weakness and enhance our internal controls, and we are planning to do the following:

- We have hired additional personnel and are continuing to expand our team. We are further designing and implementing a formalized internal control framework, including over journal entries and management review controls.
- We are continuing our efforts to improve and strengthen our control processes and procedures to fully remediate these deficiencies. Our management will continue to work with our auditors and other outside advisors to ensure that our controls and procedures are adequate and effective.

We expect that the remediation of this material weakness will be completed by December 31, 2022. However, we cannot make any assurances that we will successfully remediate this material weakness within our anticipated timeframe. We also cannot provide any assurances that the measures that we have taken and are planning to take will be sufficient to prevent future material weaknesses from occurring. We also cannot assure you that we have identified all of our existing material weaknesses.

As a public company, we are required to comply with the SEC's rules implementing Sections 302 and 404 of the Sarbanes-Oxley Act of 2002 (the "Sarbanes-Oxley Act"), which requires management to certify financial and other information in our quarterly and annual reports and to provide an annual management report on the effectiveness of controls over financial reporting (see "*Item 9A. Controls and Procedures*"). When evaluating our internal control over financial reporting, we may identify material weaknesses that we may not be able to remediate in time to meet the applicable deadline for compliance with the requirements of Section 404. If we are unable to identify and remediate material weaknesses, it could result in material misstatements to our annual or interim financial statements that might not be prevented or detected on a timely basis or result in delayed filings of required periodic reports. If we are unable to assert that our internal control over financial reporting is effective, investors may lose confidence in the accuracy and completeness of our financial reports, the market price of our Common Stock could be adversely affected and we could become subject to litigation or investigations by the NYSE, the SEC, or other regulatory authorities, which could require additional financial and management resources (see also "*—Risks Related to the Business Combination and STWO—We may face litigation and other risks as a result of material weaknesses in our internal control over financial reporting.*").

***Labor disputes could disrupt our ability to serve our customers and/or lead to higher labor costs.***

As of December 31, 2021, we had approximately 160 full-time employees, none of whom were represented by unions or covered by collective bargaining agreements. If a union sought to organize any of our employees, such organizing efforts or collective bargaining negotiations could potentially lead to work stoppages and/or slowdowns or strikes by certain of our employees, which could adversely affect our ability to serve our customers. Further, settlement of actual or threatened labor disputes or an increase in the number of our employees covered by collective bargaining agreements can have unknown effects on our labor costs, productivity and flexibility.

***We will extend product warranties for our energy storage products, which products are complex and could contain defects and may not operate at expected performance levels, which could impact sales and market adoption of our energy storage products, affect our operating results or result in claims against us.***

We develop complex and evolving energy storage products and we continue to advance the capabilities of our battery technology, product design and associated manufacturing processes. Our energy storage products are designed primarily to serve the behind-the-meter and front-of-the-meter markets. Our core technology components are incorporated into energy storage products that serve both types of customers.

We will provide an insurance-backed warranty on our energy storage products. We also will provide certain warranties with respect to the energy generation and storage systems we sell, including on their installation, operations and maintenance, and for components not manufactured by us, we generally pass through to our customers the applicable manufacturers' warranties. As part of our energy generation and storage system contracts, we may provide the customer with performance guarantees that warrant that the underlying system will meet or exceed the minimum energy generation or other energy performance requirements specified in the contract. Under these performance guarantees, we bear the risk of electricity production or other performance shortfalls, even if they result from failures in components from third-party manufacturers. These risks are exacerbated in the event such manufacturers cease operations or fail to honor their warranties.

If our warranty reserves are inadequate to cover future warranty claims on our energy storage products, our financial condition and results of operations may be harmed. Warranty reserves will include our management's best estimates of the projected costs to repair or to replace items under warranty, which will be based on actual claims incurred and an estimate of the nature, frequency and costs of future claims. Such estimates are inherently uncertain and changes to our historical or projected experience, especially with respect to Energy Warehouse and Energy Center products which are still in development and which we expect to produce at significantly greater volumes than our past products, may cause material changes to our warranty reserves in the future.

We are still gaining field operating experience with respect to our energy storage products, and despite experience gained from trials and pilot testing performed by us, our partners and our suppliers, issues may be found in existing or new energy storage products. This could result in a delay in recognition or loss of revenues, loss of market share or failure to achieve broad market acceptance. The occurrence of defects could also cause us to incur significant warranty, support and repair costs in excess of our estimates, could divert the attention of our engineering personnel from our product development efforts, and could harm our relationships with our customers. Although we seek to limit our liability, a product liability claim brought against us, even if unsuccessful, would likely be time consuming, could be costly to defend, and may hurt our reputation in the marketplace. Our customers could also seek and obtain damages from us for their losses.

***Defects or performance problems in our products could result in loss of customers, reputational damage, and decreased revenue, and we may face warranty, indemnity, and product liability claims that may arise from defective products.***

We may become subject to product liability claims, even those without merit, which could harm our business, financial condition and results of operations. We face inherent risk of exposure to claims in the event our batteries do not perform as expected or malfunction resulting in personal injury or death. Our risks in this area are particularly pronounced given our S200 batteries have not yet been commercially tested or mass produced. A successful product liability claim against us could require us to pay a substantial monetary award. Moreover, a product liability claim could generate substantial negative publicity about our batteries and business and inhibit or prevent commercialization of other future battery candidates, which would have a material adverse effect on our brand, business, prospects and operating results. Any insurance coverage might not be sufficient to cover all potential product liability claims. Any lawsuit seeking significant monetary damages either in excess of our coverage, or outside of our coverage, may have a material adverse effect on our reputation, business and financial condition. We may not be able to secure additional product liability insurance coverage on commercially acceptable terms or at reasonable costs when needed, particularly if we do face liability for our products and are forced to make a claim under our policy.

In addition, as we grow our manufacturing volume, the chance of manufacturing defects could increase. We may be unable to correct manufacturing defects or other failures of our battery modules and the products in which they are incorporated, including the Energy Warehouse and Energy Center, in a manner satisfactory to our customers, which could adversely affect customer satisfaction, market acceptance and our business reputation.

***Third parties might attempt to gain unauthorized access to our network or seek to compromise our products and services.***

Our business is dependent on the security and efficacy of our networks and computer and data management systems. For example, our Energy Warehouses are connected to and controlled and monitored by our centralized remote monitoring service, and we rely on our internal computer networks for many of the systems we use to operate our business generally. From time to time, we may face attempts by others to gain unauthorized access through the Internet or otherwise or to introduce malicious software to our IT systems. We or our products may be a target of computer hackers, organizations or malicious attackers who attempt to:

- gain access to our network or Energy Warehouses or networks of our customers;
- steal proprietary information related to our business, products, employees, and customers; or
- interrupt our systems or those of our customers.

From time to time, we encounter attempts at gaining unauthorized access to our network and we routinely run intrusion checks. To date, none has resulted in any material adverse impact to our business or operations; however, there can be no guarantee that such intrusions will not be material in the future. While we seek to detect and investigate unauthorized attempts and attacks against our network and products of which we become aware, and to prevent their recurrence where practicable through changes to our internal processes and tools and/or changes to our products, we remain potentially vulnerable to additional known or unknown threats. In addition to intentional third-party cyber-security breaches, the integrity and confidentiality of company and customer data and our intellectual property may be compromised as a result of human error, product defects, or technological failures. We utilize third-party contractors to perform certain functions for us, and they face security risks similar to us.

Any failure or perceived failure by us or our service providers to prevent information security breaches or other security incidents or system disruptions, or any compromise of security that results in or is perceived or reported to result in unauthorized access to, or loss, theft, alteration, release or transfer of, our information, or any personal information, confidential information, or other data could result in loss or theft of proprietary or sensitive data and intellectual property, could harm our reputation and competitive position and could expose us to legal claims, regulatory investigations and proceedings, and fines, penalties, and other liability. Any such actual or perceived security breach, security incident or disruption could also divert the efforts of our technical and management personnel, and could require us to incur significant

costs and operational consequences in connection with investigating, remediating, eliminating and putting in place additional tools, devices, policies, and other measures designed to prevent actual or perceived security breaches and other incidents and system disruptions, and in, for example, rebuilding internal systems, reduced inventory value, providing modifications to our products and services, defending against claims and litigation, responding to regulatory inquiries or actions, paying damages, or taking other remedial steps with respect to third parties. Moreover, we could be required or otherwise find it appropriate to expend significant capital and other resources to respond to, notify third parties of, and otherwise address the incident or breach and its root cause, and to notify individuals, regulatory authorities and others of security breaches involving certain types of data.

Further, we cannot assure that any limitations of liability provisions in our current or future contracts that may be applicable would be enforceable or adequate or would otherwise protect us from any liabilities or damages with respect to any particular claim relating to a security breach or other security-related matter. We also cannot be sure that our existing insurance coverage will continue to be available on acceptable terms or will be available in sufficient amounts to cover claims related to a security breach or incident, or that the insurer will not deny coverage as to any future claim. The successful assertion of claims against us that exceed available insurance coverage, or the occurrence of changes in our insurance policies, including premium increases or the imposition of large deductible or co-insurance requirements, could have a material adverse effect on our business, including our financial condition, operating results, and reputation.

***The failure or breach of our IT systems could affect our sales and operations.***

The availability and effectiveness of our energy storage products and our ability to conduct our business and operations, depend on the continued operation of IT and communications systems, some of which we have yet to develop or otherwise obtain the ability to use. Systems used in our business will be vulnerable to damage or interruption. Such systems could also be subject to break-ins, sabotage and intentional acts of vandalism, as well as disruptions and security incidents as a result of non-technical issues, including intentional or inadvertent acts or omissions by employees, service providers, or others. We expect to face significant challenges with respect to information security and maintaining the security and integrity of our systems and other systems used in our business, as well as with respect to the data stored on or processed by these systems. We also anticipate storing and otherwise processing confidential business information of ourselves and third parties, as well as personal information and other data. Advances in technology, an increased level of sophistication and expertise of hackers, and new discoveries in the field of cryptography can result in a compromise or breach of the systems used in our business or of security measures used in our business to protect confidential information, personal information, and other data. We may be a target for attacks by state-sponsored actors and others designed to disrupt our operations or to attempt to gain access to our systems or to data that is processed or maintained in our business.

We use outsourced service providers to help provide certain services. For example, we utilize email and collaboration tools, and other third-party services and service providers that store or otherwise process information, including personal information and confidential business information, on our behalf. Any such outsourced service providers face similar security and system disruption risks as us. We are at risk for interruptions, outages and breaches of our and our outsourced vendors' and service providers' operational systems and security systems, our products' and services' integrated software and technology, and customer data that we or our third-party service providers process. These may be caused by, among other causes, physical theft, viruses or other malicious code, denial or degradation of service attacks, ransomware, social engineering schemes, and insider theft or misuse. While we take steps to review security protections of services provided to us, there can be no guarantee that a failure or breach of such systems will not occur or be perceived to occur. If such failures were to occur, we may not be able to sufficiently recover to avoid the loss of data or any adverse impact on our operations that are dependent on such IT systems. This could result in lost sales as we may not be able to meet the demands for our product, and other harm to our business and results of operations. Further, some of the systems used in our business will not be fully redundant, and our disaster recovery planning cannot account for all eventualities. Any security breaches or incidents or other damage to or disruptions to any data centers or other systems used in our business could result in lengthy interruptions in our service and may adversely affect our business, prospects, financial condition and operating results.

Furthermore, because our IT systems are essential for the exchange of information both internally and in communicating with third parties, including our suppliers and manufacturers, cyber-security breaches could potentially lead to unauthorized acquisition or unauthorized release of sensitive, confidential or personal data or information, improper use of our systems, or, unauthorized access, use, disclosure, modification or destruction of information or defective products. Our IT systems also help us produce financial information. Any disruption or cyber-security breach could impact our ability to produce timely and accurate financial information needed for compliance, audit, and reporting purposes. If any such cyber-security breaches were to continue, our operations and ability to communicate both internally and with third parties may be negatively impacted.

Significant capital and other resources may be required in efforts to protect against information security breaches, security incidents, and system disruptions, or to alleviate problems caused by actual or suspected information security breaches and other security incidents and system disruptions. The resources required may increase over time as the methods used by hackers and others engaged in online criminal activities and otherwise seeking to obtain unauthorized access to systems or data, and to disrupt systems, are increasingly sophisticated and constantly evolving. In addition, laws, regulations, government guidance, and industry standards and practices in the United States and elsewhere are rapidly evolving to combat these threats. We may face increased compliance burdens regarding such requirements with regulators and customers regarding our products and services and also incur additional costs for oversight and monitoring of our supply chain. We also cannot be certain that these systems, networks, and other infrastructure or technology upon which we rely, including those of our third-party suppliers or service providers, will be effectively implemented, maintained or expanded as planned, or will be free from bugs, defects, errors, vulnerabilities, viruses, or malicious code. We may be required to expend significant resources to make corrections or to remediate issues that are identified or to find alternative sources. Any of these circumstances potentially could have a negative impact on our business, prospects, financial condition and operating results.

***We may not be able to identify or complete transactions with attractive acquisition candidates. Future acquisitions may result in significant transaction expenses and we may incur significant costs. We may experience integration and consolidation risks associated with these future acquisitions.***

We may from time to time selectively pursue on an opportunistic basis acquisitions of additional businesses that complement our existing business and footprint. The success of any such growth strategy would depend, in part, on selecting strategic acquisition candidates at attractive prices and effectively integrating their businesses into our own, including with respect to financial reporting and regulatory matters. There can be no assurance that we will be able to identify attractive acquisition candidates or complete the acquisition of any identified candidates at favorable prices and upon advantageous terms and conditions, including financing alternatives.

We may not have sufficient management, financial and other resources to integrate and consolidate any future acquisitions. Any significant diversion of management's attention or any major difficulties encountered in the integration of the businesses we acquire could have a material adverse effect on our business, financial condition or results of operations, which could decrease our profitability and make it more difficult for us to grow our business. Among other things, these integration risks could include:

- the loss of key employees;
- the disruption of operations and business;
- the retention or transition of customers and vendors;
- the integration of corporate cultures and maintenance of employee morale;
- inability to maintain and increase competitive presence;
- customer loss and revenue loss;
- possible inconsistencies in standards, control procedures and policies;
- problems with the assimilation of new operations, sites or personnel, which could divert resources from our regular operations;
- integration of financial reporting and regulatory reporting functions; and/or
- potential unknown liabilities.

In addition, general economic conditions or unfavorable capital and credit markets could affect the timing and extent to which we can successfully acquire or integrate new businesses, which could limit our revenues and profitability.

***Our facilities or operations could be damaged or adversely affected as a result of natural disasters and other catastrophic events.***

Our facilities or operations could be adversely affected by events outside of our control, such as natural disasters, wars, health epidemics such as the ongoing COVID-19 pandemic, and other calamities. We cannot assure you that any backup systems will be adequate to protect our facilities or operations from the effects of fire, floods, typhoons, earthquakes, power loss, telecommunications failures, break-ins, war, riots, terrorist attacks or similar events. Any of the foregoing events may give rise to interruptions, breakdowns, system failures, technology platform failures or internet failures, which could cause the loss or corruption of data or malfunctions of software or hardware as well as adversely affect our ability to provide services.

***Our ability to utilize our net operating loss and tax credit carryforwards to offset future taxable income may be subject to certain limitations.***

In general, under Section 382 of the Code, a corporation that undergoes an “ownership change” is subject to limitations on its ability to use its pre-change net operating loss carryforwards, or NOLs, to offset future taxable income. The limitations apply if a corporation undergoes an “ownership change,” which is generally defined as a greater than fifty percentage point change (by value) in its equity ownership by certain stockholders over a three-year period. If we have experienced an ownership change at any time since our incorporation, we may already be subject to limitations on our ability to utilize our existing NOLs and other tax attributes to offset taxable income or tax liability. In addition, any business combination and future changes in our stock ownership, which may be outside of our control, may trigger an ownership change. Similar provisions of state tax law may also apply to limit ESS’ use of accumulated state tax attributes. As a result, even if we earn net taxable income in the future, our ability to use our pre-change NOL carryforwards and other tax attributes to offset such taxable income or tax liability may be subject to limitations, which could potentially result in increased future income tax liability to us. Currently, we do not expect to be able to utilize our NOLs and have recorded a full valuation allowance against the deferred tax assets attributable to NOLs.

There is also a risk that changes in law or regulatory changes made in response to the need for some jurisdictions to raise additional revenue to help counter the fiscal impact from the COVID-19 pandemic or for other unforeseen reasons, including suspensions on the use of net operating losses or tax credits, possibly with retroactive effect, may result in our existing net operating losses or tax credits expiring or otherwise being unavailable to offset future income tax liabilities. Our net operating losses may also be subject to limitations in certain states.

***We may not have sufficient insurance coverage to cover business continuity.***

A sustained or repeated interruption in the manufacturing of our products due to labor shortage, fire, flood, war, pandemic, natural disasters and similar unforeseen events beyond our control may interfere with our ability to manufacture our products and fulfil customers’ demands in a timely manner, and make it difficult, or in certain cases, impossible for us to continue our business for a substantial period of time. Failure to manufacture our products and meet customer demands would impair our ability to generate revenues which would adversely affect our financial results. We currently do not have a formal disaster recovery or business continuity plan in place and any disaster recovery and business continuity plans that we may put in place may prove inadequate in the event of a serious disaster or similar event. As part of our risk management, we maintain insurance coverage for our business. However, we cannot assure you that the amounts of insurance will be sufficient to satisfy any damages or losses we may incur. If our insurance coverage is not sufficient, we may incur substantial expenses, which, could have a material adverse effect on our business.

As we grow our business, the need for business continuity planning and disaster recovery plans will grow in significance. If we are unable to maintain adequate insurance at reasonable terms or are unable to develop adequate plans to ensure that our business functions continue to operate during and after a disaster or emergency, and successfully execute on those plans in the event of a disaster or emergency, our business and reputation would be harmed.

***We face risks associated with expanding our international operations, including unfavorable and uncertain regulatory, political, economic, tax and labor conditions.***

We are subject to legal and regulatory requirements, political uncertainty and social, environmental and economic conditions in numerous jurisdictions, over which we have little control and which are inherently unpredictable. Our operations in such jurisdictions, particularly as a company based in the United States, create risks relating to conforming our products to regulatory and safety requirements and charging and other electric infrastructures; organizing local operating entities; establishing, staffing and managing foreign business locations; attracting local customers; navigating foreign government taxes, regulations and permit requirements; enforceability of our contractual rights; trade restrictions, foreign direct investment review regimes, customs regulations, tariffs and price or exchange controls; and preferences in foreign nations for domestically manufactured products. Such conditions may increase our costs and tax liabilities, impact our ability to sell our products and require significant management attention, and may harm our business if we are unable to manage them effectively.

***Changes in the U.S. trade environment, including the recent imposition of import tariffs, could adversely affect the amount or timing of our revenues, results of operations or cash flows.***

We currently procure the injected molded and machined plastic parts as well as cast aluminum parts for our products from China, as we believe that the materials procured from our Chinese suppliers currently have the best overall performance and price compared to domestic alternatives. Escalating trade tensions between the United States and China have recently led to certain increased tariffs and trade restrictions. There can be no guaranty that these developments will not negatively impact the price of the positive electrode used in our products. It is possible we could obtain similar performing materials in the United States, but such sources would likely also charge a higher cost than our current suppliers, which would

negatively impact our gross margins. There is no guaranty that we will be able to identify alternate suppliers that meet our quality, volume and price requirements. Failure to meet these requirements could result in supply disruptions and increased costs. It is difficult to predict what further trade-related actions governments may take, which may include additional or increased tariffs and trade restrictions, and we may be unable to react to such actions quickly and effectively, which could result in supply shortages and increased costs.

***We could be subject to foreign exchange risk.***

Our international sales are expected to be denominated in U.S. dollars. As a result, we will not have significant direct exposure to currency valuation exchange rate fluctuations. However, because our products are sold internationally, to the extent that the U.S. dollar strengthens against the foreign currency of a customer or potential customer, we may find our products at a price disadvantage as compared with other non-U.S. suppliers. This could lead to our receiving lower prices or being unable to compete for that specific customer's business. Consequently, currency fluctuations could adversely affect the competitiveness of our products in international markets.

***We may be required to take write-downs or write-offs, restructuring and impairment or other charges that could have a significant negative effect on our financial condition, results of operations and stock price, which could cause you to lose some or all of your investment.***

Unexpected risks may arise that cause us to write-down or write-off assets, restructure our operations, or incur impairment or other charges that could result in losses. Even though these charges may be non-cash items and not have an immediate impact on our liquidity, the fact that we report charges of this nature could contribute to negative market perceptions about us or our securities. In addition, charges of this nature may cause us to violate net worth or other covenants to which we may be subject. Accordingly, our stockholders could suffer a reduction in the value of their shares.

***Our results of operations could vary as a result of changes to our accounting policies or the methods, estimates and judgments we use in applying our accounting policies.***

The method estimates and judgments we use in applying our accounting policies have a significant impact on our results of operations. Such methods, estimates and judgments are, by their nature, subject to substantial risks, uncertainties and assumptions, and factors may arise over time that could lead us to reevaluate our methods, estimates and judgments.

In future periods, management will regularly evaluate its estimates such as for service agreements, loss accruals, warranty, performance guarantees, liquidated damages and inventory valuation allowances. Changes in those estimates and judgments could significantly affect our financial condition and results of operations. We will also adopt changes required by the Financial Accounting Standards Board and the SEC.

***We have already incurred, and may continue to incur, significant increased expenses and administrative burdens as a public company, which could have a material adverse effect on our business, financial condition and results of operations.***

We face increased legal, accounting, administrative and other costs and expenses as a public company that ESS did not incur as a private company prior to the Business Combination. The Sarbanes-Oxley Act, including the requirements of Section 404, as well as rules and regulations subsequently implemented by the SEC, the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 and the rules and regulations promulgated and to be promulgated thereunder, the Public Company Accounting Oversight Board and the securities exchanges impose additional reporting and other obligations on public companies. Compliance with public company requirements is expected to increase costs and make certain activities more time-consuming. A number of those requirements will require us to carry out activities that ESS had not done prior to the Business Combination. For example, we have created new board committees and are adopting new internal controls and disclosure controls and procedures. In addition, additional expenses associated with SEC reporting requirements have been incurred and will continue to be incurred. Furthermore, if any issues in complying with those requirements are identified (for example, if our auditors identify a material weakness or significant deficiency in our internal control over financial reporting), we could incur additional costs rectifying those issues, and the existence of those issues could adversely affect our reputation or investor perceptions of us. It is also more expensive to obtain directors' and officers' liability insurance. Risks associated with our status as a public company may make it more difficult to attract and retain qualified persons to serve on our board of directors or as executive officers. The additional reporting and other obligations imposed by these rules and regulations increase legal and financial compliance costs and the costs of related legal, accounting and administrative activities. These increased costs will require us to divert a significant amount of money that could otherwise be used to expand our business and achieve strategic objectives. Advocacy efforts by stockholders and third parties may also prompt additional changes in governance and reporting requirements, which could further increase our costs.

***Our management may not successfully or effectively manage our transition to a public company.***

Our management team may not successfully or effectively manage our transition to a public company, which transition will be subject to significant regulatory oversight and reporting obligations under federal securities laws. Its limited experience in dealing with the increasingly complex laws pertaining to public companies could be a significant disadvantage in that it is likely that an increasing amount of management's time may be devoted to these activities which will result in less time being devoted to our management and growth. We may not have adequate personnel with the appropriate level of knowledge, experience and training in the accounting policies, practices or internal controls over financial reporting required of public companies in the United States. The development and implementation of the standards and controls necessary for us to achieve the level of accounting standards required of a public company in the United States may require costs greater than expected. It is possible that we will be required to expand our employee base and hire additional employees to support our operations as a public company which will increase our operating costs in future periods.

***We may be unable to introduce various financing programs to expand market reach.***

Our energy storage products have a relatively high upfront capital cost which may prevent some customers from purchasing these products. In order to grow our customer base, we may work with financial institutions to develop and offer customer financing arrangements similar to those offered in the solar, lithium-ion battery storage and fuel cell sectors. These arrangements may include traditional customer lease or loan financing as well as long-term storage-as-a-service contracts. Such customer financing arrangements are bespoke products which take time to develop and are not widely offered by numerous financial institutions, so there is a chance we may fail to complete them and therefore fail to attract customers who are sensitive to the high upfront cost of our energy storage products. Additionally, if we do not successfully monitor and comply with applicable national, state and/or local financial regulations and consumer protection laws governing consumer financing transactions, we may become subject to enforcement actions or penalties.

Finally, our potential financing programs may involve reliance on periodic customer payments over a term of years, and therefore may expose us to customer credit risk. In the event of a widespread economic downturn or other catastrophic event, our customers may be unable or unwilling to satisfy their payment obligations to us on a timely basis or at all. If a significant number of our customers default, we may incur substantial credit losses and/or impairment charges with respect to the underlying assets.

***We may engage in transactions with related parties and such transactions present possible conflicts of interest that could have an adverse effect on us.***

We may enter into transactions with related parties. Related-party transactions create the possibility of conflicts of interest with regard to our management, including that:

- we may enter into contracts between us, on the one hand, and related parties, on the other, that are not as a result of arm's-length transactions;
- our executive officers and directors that hold positions of responsibility with related parties may be aware of certain business opportunities that are appropriate for presentation to us as well as to such other related parties and may present such business opportunities to such other parties; and
- our executive officers and directors that hold positions of responsibility with related parties may have significant duties with, and spend significant time serving, other entities and may have conflicts of interest in allocating time.

Such conflicts could cause an individual in our management to seek to advance his or her economic interests or the economic interests of certain related parties above ours. Further, the appearance of conflicts of interest created by related-party transactions could impair the confidence of our investors. Our board of directors regularly reviews these transactions. Notwithstanding this, it is possible that a conflict of interest could have a material adverse effect on our business, financial condition and results of operations.

**Risks Related to Regulatory, Environmental and Legal Issues**

***We may face regulatory challenges to or limitations on our ability to sell our Energy Centers and Energy Warehouses directly in certain markets. Expanding operations internationally could expose us to additional risks.***

While we intend to continue to sell our products across the United States both directly and through third parties, our ability to continue such sales may be affected by future limitations, either directly to the ability to sell energy storage or by broader regulation related to the sales and operation of distributed energy resources, which could have an impact on our ability to sell our products to the market.

Although we currently primarily operate in the United States, we continue to expand our business internationally. Any expansion internationally could subject our business to risks associated with international operations. In addition, there may

be laws in international jurisdictions we have not yet entered or laws we are unaware of in jurisdictions we have entered that may restrict our sales or other business practices. Even for those jurisdictions we have analyzed, the laws in this area can be complex, difficult to interpret and may change over time. Continued regulatory limitations and other obstacles interfering with our ability to sell our energy storage products may harm our business, financial condition and results of operations. Additionally, any regulation that affects the sale or operations of distributed energy resources could diminish the real or perceived value of our energy storage solutions in those markets. As a result of these risks, any potential future international expansion efforts that we may undertake may not be successful.

***Our customers may be required to obtain environmental, health and safety or other certifications in order to install our products. If our customers are unable to obtain the necessary certifications, we will not be able to install our products, which would negatively impact our revenues.***

While our engineering team has worked closely with the CSA Group, Intertek, UL and Technischer Überwachungsverein certification agencies to obtain certifications of our flow battery products against all applicable safety standards, there is no guarantee that such certifications shall continue to be obtained. From our prior certifications, we have expanded our flow battery product certification to the European Conformity marking in the European Union and intend to expand to other national standards such as the international certification of the International Electrotechnical Commission (“IEC”). Failure to obtain IEC certification may have impact on our revenues, as such certifications are required by some of our customers.

***We are subject to multiple U.S. federal, state and local regulations. Changes in applicable law, regulations or requirements, or our material failure to comply with any of them, can increase our costs and have other negative impacts on our business.***

Applicable laws and requirements address multiple aspects of our operations, such as worker safety, consumer rights, privacy, cybersecurity, employee benefits and more, and can often have different requirements in different jurisdictions. Changes in these requirements, or any material failure to comply with them, could increase our costs, affect our reputation, result in claims, litigation, and regulatory investigations or other proceedings, which may result in fines, penalties, and other liabilities, and which may limit our business, drain management’s time and attention or otherwise, and generally impact our operations in adverse ways.

***We are subject to requirements relating to environmental and safety regulations and environmental remediation matters which could adversely affect our business, results of operation and reputation.***

We are subject to numerous federal, state and local environmental laws and regulations governing, among other things, solid and hazardous waste storage, treatment and disposal, and remediation of releases of hazardous materials. There are significant capital, operating and other costs associated with compliance with these environmental laws and regulations. Environmental laws and regulations may become more stringent in the future, which could increase costs of compliance or require us to manufacture with alternative technologies and materials.

Federal, state and local authorities also regulate a variety of matters, including, but not limited to, health, safety and permitting in addition to the environmental matters discussed above. New legislation and regulations may require us to make material changes to our operations, resulting in significant increases to the cost of production.

Our manufacturing process will have hazards such as but not limited to hazardous materials, machines with moving parts, and high voltage and/or high current electrical systems typical of large manufacturing equipment and related safety incidents. There may be safety incidents that damage machinery or product, slow or stop production, or harm employees. Consequences may include litigation, regulation, fines, increased insurance premiums, mandates to temporarily halt production, workers’ compensation claims, or other actions that impact our company brand, finances, or ability to operate.

***We may be exposed to delays, limitations and risks related to the environmental permits and other operating permits required to operate our products.***

Operation of our manufacturing facilities requires land use and environmental permits and other operating permits from federal, state and local government entities. While we have all permits necessary to carry out and perform our current plans and operations at our existing facility, we may require additional environmental, wastewater and land use permits for the commercial operation of any future manufacturing facilities. Delays, denials or restrictions on any of the applications for or assignment of the permits to operate our manufacturing facilities could adversely affect our ability to execute on our business plans and objectives.

***We may collect and process certain information about our customers and about individuals and will be subject to various laws and regulations relating to privacy, data protection and cybersecurity.***

We may collect and process certain battery data required for performance monitoring, safety and serviceability. This information is transmitted to our control center and stored. Such data currently is limited to battery operational and safety

parameters. Additionally, we collect and otherwise process other data relating to individuals, including business partners, prospects, employees, vendors, and contractors. Our handling of data relating to individuals is subject to a variety of laws and regulations relating to privacy, data protection and cybersecurity, and we may become subject to additional obligations, including contractual obligations, relating to our maintenance and other processing of this data, and new or modified laws or regulations. Laws, regulations, and other actual and potential obligations relating to privacy, data protection, and cybersecurity are evolving rapidly, and we expect to potentially be subject to new laws and regulations, or new interpretations of laws and regulations, in the future in various jurisdictions. These laws, regulations, and other obligations, and changes in their interpretation, could require us to modify our operations and practices, restrict our activities, and increase our costs. Further, these laws, regulations, and other obligations are complex and compliance with them can be difficult. It is possible that these laws, regulations, and other obligations may be inconsistent with one another or be interpreted or asserted to be inconsistent with our business or practices. We anticipate needing to dedicate substantial resources to comply with laws, regulations, and other obligations relating to privacy and cybersecurity in order to comply. Any actual or alleged failure by us to comply with our privacy policy or any federal, state or international privacy, data protection or security laws or regulations or other obligations could result in claims and litigation against us, regulatory investigations and other proceedings, legal liability, fines, damages and other costs. Any actual or alleged failure by any of our vendors or business partners to comply with contractual or legal obligations regarding the protection of information about our customers could carry similar consequences. Should we become subject to additional privacy or data protection laws, regulations, or other obligations relating to privacy, data protection or cybersecurity, we may need to undertake compliance efforts that could carry a large cost and could entail substantial time and other resources.

Further, although we take steps to protect the security of our customers' personal information and other personal information within our control, we may face actual or perceived breaches of security, security incidents, or other misuses of this information, and many jurisdictions have enacted laws requiring companies to notify individuals, regulatory authorities and others of security breaches involving certain types of data. We may be required to expend significant resources to comply with security breach and security incident notification requirements if a third party accesses or acquires such personal information without authorization, if we otherwise experience a security breach or incident or loss or damage of personal information, or if this is perceived to have occurred. Any actual or perceived breach of our network security or systems, or those of our vendors or service providers, could result in claims, litigation, and proceedings against us by governmental entities or others, have negative effects on our business and future prospects, including possible fines, penalties and damages, and could result in reduced demand for our energy storage products and harm to our reputation and brand, resulting in negative impacts to our business, prospects, and financial results.

***We could be subject to penalties and other adverse consequences for any violations of the FCPA, and other foreign anti-bribery and anti-corruption laws.***

We are subject to the FCPA, the U.S. domestic bribery statute contained in 18 U.S.C. § 201, the United Kingdom Bribery Act 2010, and possibly other anti-bribery and anti-corruption laws in countries outside of the United States in which we conduct our activities. We may have business dealings with customers in certain countries that are high risk for corruption. Anti-corruption and anti-bribery laws have been enforced aggressively in recent years and are interpreted broadly to generally prohibit companies and their employees, agents, representatives, business partners, and third-party intermediaries from authorizing, offering, or providing, directly or indirectly, improper payments or benefits to recipients in the public or private sector.

We sometimes leverage third parties to sell our products and conduct our business abroad. We, our employees, agents, representatives, business partners or third-party intermediaries may have direct or indirect interactions with officials and employees of government agencies or state-owned or affiliated entities and may be held liable for the corrupt or other illegal activities of these employees, agents, representatives, business partners or third-party intermediaries even if we do not explicitly authorize such activities. We cannot assure you that all of our employees and agents will not take actions in violation of applicable law, for which we may be ultimately held responsible. We currently have contracts and may potentially operate in parts of the world that have experienced higher levels of governmental corruption and as we increase our international sales and business, our risks under these laws may increase. In addition, due to the level of regulation in our industry and related energy industries, our entry into certain jurisdictions may require substantial government contact where norms can differ from U.S. standards.

These laws also require that we keep accurate books and records and maintain internal controls and compliance procedures designed to prevent any such actions. While we have policies and procedures to address and to mandate compliance with such laws, we cannot assure you that none of our employees, agents, representatives, business partners or third-party intermediaries will take actions in violation of our policies and applicable law, for which we may be ultimately held responsible.

In the event that we believe, have reason to believe, or are notified that our employees, agents, representatives, business partners, or third party intermediaries have or may have violated applicable laws, including anti-bribery and anti-corruption laws, we may be required to investigate or have outside counsel investigate the relevant facts and circumstances, and detecting, investigating and resolving actual or alleged violations can be expensive and require significant time and attention from senior management. Any allegation or violation of U.S. federal and state and non-U.S. laws, regulations and policies regarding anti-bribery and anti-corruption could result in substantial fines, sanctions, civil and/or criminal penalties, whistleblower complaints, sanctions, settlements, prosecution, enforcement actions, damages, adverse media coverage, investigations, loss of export privileges, suspension or debarment from government contracts, or other curtailment of operations in the United States or other applicable jurisdictions. In addition, actual or alleged violations could damage our reputation and ability to do business. Any of the foregoing could materially adversely affect our reputation, business, financial condition, prospects and results of operations.

***We are subject to governmental export and import controls and economic sanctions programs that could impair our ability to compete in international markets or subject us to liability if we violate these controls.***

Our products and services are, or may in the future be, subject to U.S. export control laws and regulations including the Export Administration Regulations (“EAR”) and trade and economic sanctions maintained by the Office of Foreign Assets Control (“OFAC”) and to similar laws and regulations in all other jurisdictions in which we operate. As such, an export license may be required to export, re-export or transfer our products and services to certain countries or end-users or for certain end-uses. If we were to fail to comply with such export control laws and regulations or trade and economic sanctions, we could be subject to both civil and criminal penalties, including substantial fines, possible incarceration for employees and managers for willful violations, and the possible loss of our export and/or import privileges. Compliance with the EAR, OFAC sanctions, and other applicable regulatory requirements regarding the import and export of our products or the performance of services, may create delays in the introduction of our products and services in non-U.S. markets, prevent our customers with non-U.S. operations from deploying these products and services throughout their global systems or, in some cases, prevent the export of the products and services to some countries or users altogether. We may enter into agreements with customers and counterparties located in countries subject to list-based OFAC sanctions.

Obtaining the necessary export license for a particular sale or offering may not be possible, may be time-consuming, and may result in the delay or loss of sales opportunities. Further, U.S. export control laws and trade and economic sanctions as well as similar laws and regulations in other jurisdictions prohibit the export of products and services to certain U.S. embargoed or sanctioned countries, governments, and persons, as well as for prohibited end-uses. Even though we have taken precautions to ensure that we and our partners comply with all relevant import and export control laws and regulations and sanctions, monitoring and ensuring compliance with these complex laws and regulations is particularly challenging, and any failure by us or our partners to comply with such laws and regulations could have negative consequences for us, including reputational harm, government investigations and penalties.

Any change in domestic or international export or import laws or regulations, economic sanctions, or related legislation, shift in the enforcement or scope of existing export, import, or sanctions laws or regulations, or change in the countries, governments, persons, or technologies targeted by such export, import, or sanctions laws or regulations, could result in decreased use of our products and/or services by, or in our decreased ability to export or sell our products and/or services to, end-customers with international operations.

***We may be exposed to various risks related to legal proceedings or claims that could adversely affect our operating results. The nature of our business exposes us to various liability claims, which may exceed the level of our insurance coverage resulting in our not being fully protected.***

We may be party to lawsuits in the normal course of our business. Litigation can be expensive, lengthy and disruptive to normal business operations. Moreover, the results of complex legal proceedings are difficult to predict. Responding to lawsuits brought against us, or legal actions that we may initiate, can be expensive and time-consuming. Unfavorable outcomes from these claims and/or lawsuits could adversely affect our business, financial condition or results of operations, and we could incur substantial monetary liability and/or be required to change our business practices.

Our business may expose us to claims for personal injury, death or property damage resulting from the use of our products or from employee related matters. Additionally, we could be subject to potential litigation associated with compliance with various laws and governmental regulations at the federal, state or local levels, such as those relating to the protection of persons with disabilities, employment, health, safety, security and other regulations under which we operate.

We carry comprehensive insurance, subject to deductibles, at levels we believe are sufficient to cover existing and future claims made during the respective policy periods. However, we may be exposed to multiple claims, and, as a result, could incur significant out-of-pocket costs before reaching the deductible amount, which could adversely affect our financial condition and results of operations. In addition, the cost of such insurance policies may increase significantly upon renewal

of those policies as a result of general rate increases for the type of insurance we carry as well as our historical experience and experience in our industry. Although we have not experienced any material losses that were not covered by insurance, our existing or future claims may exceed the coverage level of our insurance, and such insurance may not continue to be available on economically reasonable terms, or at all. If we are required to pay significantly higher premiums for insurance, are not able to maintain insurance coverage at affordable rates or must pay amounts in excess of claims covered by our insurance, then we could experience higher costs that could adversely affect our financial condition and results of operations.

***The reduction, elimination or expiration of government tax credits, subsidies and economic incentives related to renewable energy solutions could reduce demand for our technology and harm our business.***

The U.S. federal government and some state and local governments provide incentives to end users and potential purchasers of our energy storage products in the form of rebates, tax credits and other financial incentives, such as system performance payments and payments for renewable energy credits associated with renewable energy generation. We will rely on these governmental rebates, tax credits and other financial incentives to significantly lower the effective price of the energy storage products to our customers in the United States. However, these incentives may expire on a particular date, end when the allocated funding is exhausted, or be reduced or terminated as a matter of regulatory or legislative policy.

Our energy storage products have qualified for tax exemptions, incentives or other customer incentives in many states including California. Some states have utility procurement programs and/or renewable portfolio standards for which our technology is eligible. There is no guarantee that these policies will continue to exist in their current form, or at all. Such state programs may face increased opposition on the U.S. federal, state and local levels in the future. Changes in federal or state programs could reduce demand for our energy storage products, impair sales financing and adversely impact our business results.

***We have historically entered into, and may in the future seek, government grants and contracts, which are subject to a number of uncertainties, challenges, and risks.***

In the past, we have relied on government grants and contracts to partially fund our research and development activities. In the future, we may seek to enter into additional government grants and contracts. Contracts and grants with government entities are subject to a number of risks, and obtaining grant funding and selling to government entities can be highly competitive, expensive, and time consuming, often requiring significant upfront time and expense without any assurance that we will be successful. In the event that we are successful in being awarded a government contract or grant, such award may be subject to appeals, disputes, or litigation, including, but not limited to, bid protests by unsuccessful bidders.

Government contracts often contain provisions and are subject to laws and regulations that provide government customers with additional rights and remedies not typically found in commercial contracts. These rights and remedies allow government customers, among other things, to terminate existing contracts for convenience or with short notice. As a result of actual or perceived noncompliance with government contracting laws, regulations, or contractual provisions, we may be subject to non-ordinary course audits and internal investigations which may prove costly to our business financially, divert management time, or limit our ability to continue selling our products and services to our government customers. These laws and regulations may impose other added costs on our business, and failure to comply with these or other applicable regulations and requirements, including non-compliance in the past, could lead to claims for damages, downward contract price adjustments or refund obligations, civil or criminal penalties, and termination of contracts and suspension or debarment from government contracting for a period of time with government agencies. Any such damages, penalties, disruption, or limitation in our ability to do business with a government would adversely impact, and could have a material adverse effect on, our business, results of operations, financial condition, public perception, and growth prospects.

***We are an emerging growth company and a smaller reporting company within the meaning of the Securities Act, and if we take advantage of certain exemptions from disclosure requirements available to “emerging growth companies” or “smaller reporting companies,” this could make our securities less attractive to investors and may make it more difficult to compare our performance with other public companies.***

We are an “emerging growth company” within the meaning of the Securities Act, as modified by the JOBS Act, 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” including, but not limited to, not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act, reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements, and exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and shareholder approval of any golden parachute payments not previously approved. As a result, our shareholders may not have access to certain information they may deem important. We could be an emerging growth company for up to five years from the STWO IPO, although circumstances could cause us to lose that status earlier, including if the market value of the Common Stock held by non-affiliates exceeds

\$700,000,000 as of any June 30 before that time, in which case we would no longer be an emerging growth company as of the following December 31. We cannot predict whether investors will find our securities less attractive because we expect to rely on these exemptions. If some investors find our Common Stock less attractive as a result of our reliance on these exemptions, the trading price of our Common Stock may be lower than it otherwise would be, there may be a less active trading market for our Common Stock and the trading price of our Common Stock may be more volatile.

Further, Section 102(b)(1) of the JOBS Act exempts emerging growth companies from being required to comply with new or revised financial accounting standards until private companies (that is, those that have not had a Securities Act registration statement declared effective or do not have a class of securities registered under the Exchange Act) are required to comply with the new or revised financial accounting standards. 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 an election to opt out is irrevocable. We have elected not to opt out 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 which is neither an emerging growth company nor an emerging growth company which has opted out of using the extended transition period difficult or impossible because of the potential differences in accounting standards used.

Additionally, we are currently a “smaller reporting company” as defined in Item 10(f)(1) of Regulation S-K. Smaller reporting companies may take advantage of certain reduced disclosure obligations, including, among other things, providing only two years of audited financial statements. We will remain a smaller reporting company only until the last day of the fiscal year in which (i) the market value of the Common Stock held by non-affiliates exceeds \$250,000,000 as of the prior June 30, or (ii) our annual revenues exceeded \$100,000,000 during such completed fiscal year and the market value of the Common Stock held by non-affiliates exceeds \$700,000,000 as of the prior June 30. To the extent we take advantage of such reduced disclosure obligations, it may also make comparison of our financial statements with other public companies difficult or impossible.

***We are subject to changing laws and regulations regarding regulatory matters, corporate governance and public disclosure that have increased both our costs and the risk of non-compliance.***

We are subject to rules and regulations by various governing bodies, including, for example, the SEC, which are charged with the protection of investors and the oversight of companies whose securities are publicly traded, and to new and evolving regulatory measures under applicable law. Our efforts to comply with new and changing laws and regulations have resulted in increased general and administrative expenses and a diversion of management time and attention.

Moreover, because these laws, regulations and standards are subject to varying interpretations, their application in practice may evolve over time as new guidance becomes available. This evolution may result in continuing uncertainty regarding compliance matters and additional costs necessitated by ongoing revisions to our disclosure and governance practices. If we fail to address and comply with these regulations and any subsequent changes, we may be subject to penalty and our business may be harmed.

***Changes in tax laws or in their implementation or interpretation may adversely affect our business and financial condition.***

We are or may become subject to income- and non-income-based taxes in the United States under federal, state and local jurisdictions and in certain foreign jurisdictions in which we operate. Tax laws, regulations and administrative practices in these jurisdictions may be subject to significant change, with or without advance notice. For example, the U.S. House of Representatives has proposed numerous changes to U.S. federal income tax law, including modifications of the provisions addressing taxation of international business operations and the imposition of a global minimum tax. Such changes, if enacted, may adversely affect our effective tax rates, cash flows and general business condition.

#### **Risks Related to Our Intellectual Property**

***If we fail to protect, or incur significant costs in defending, our intellectual property and other proprietary rights, then our business and results of operations could be materially harmed.***

Our success depends to a significant degree on our ability to protect our intellectual property and other proprietary rights. We rely on a combination of patent, trademark, copyright, trade secret, and unfair competition laws, as well as confidentiality and other contractual provisions with our customers, suppliers, employees, and others, to establish and protect our intellectual property and other proprietary rights. Our ability to enforce these rights is subject to general litigation risks, as well as uncertainty as to the enforceability of our intellectual property rights in various countries. When we seek to enforce our rights, we may be subject to claims that our intellectual property rights are invalid or not enforceable. Our assertion of intellectual property rights may result in another party seeking to assert claims against us,

which could harm our business. Our inability to enforce intellectual property rights under any of these circumstances would likely harm our competitive position and business.

We have applied for patents in the United States, Europe, Australia, and under the Patent Cooperation Treaty, some of which have been issued. We cannot guarantee that any of our pending applications will be approved or that our existing and future intellectual property rights will be sufficiently broad to protect our proprietary technology, and any failure to obtain such approvals or finding that our intellectual property rights are invalid or unenforceable could force us to, among other things, rebrand or re-design our affected products. In countries where we have not applied for patent protection or where effective intellectual property protection is not available to the same extent as in the United States, we may be at greater risk that our proprietary rights will be misappropriated, infringed, or otherwise violated.

Our intellectual property may be stolen or infringed upon. In the event of such theft or infringement, we may be required to initiate lawsuits to protect our significant investment in our intellectual property. So far, we have been neither the subject of any lawsuits challenging the ownership or validity of our intellectual property, nor have we been required to initiate any lawsuits to protect our intellectual property. However, any such lawsuits may consume management and financial resources for long periods of time and may not result in outcomes that are favorable or readily enforceable, which may adversely affect our business, financial condition or results of operations.

***Third parties may assert that we are infringing upon their intellectual property rights, which could divert management's attention, cause us to incur significant costs, and prevent us from selling or using the technology to which such rights relate.***

Our competitors and other third parties hold numerous patents related to technology used in our industry. From time to time, we may also be subject to claims of intellectual property right infringement and related litigation, and, if we gain greater recognition in the market, we will face a higher risk of being the subject of claims that we have violated others' intellectual property rights. While we believe that our products and technology do not infringe in any material respect upon any valid intellectual property rights of third parties, we cannot be certain that we would be successful in defending against any such claims. If we do not successfully defend or settle an intellectual property claim, we could be liable for significant monetary damages and could be prohibited from continuing to use certain technology, business methods, content, or brands. To avoid a prohibition, we could seek a license from the applicable third party, which could require us to pay significant royalties, increasing our operating expenses. If a license is not available at all or not available on reasonable terms, then we may be required to develop or license a non-violating alternative, either of which could require significant effort and expense. If we cannot license or develop a non-violating alternative, we would be forced to limit or stop sales of our offerings and may be unable to effectively compete. Any of these results would adversely affect our business, financial condition and results of operations.

***Our patent applications may not result in issued patents or our patent rights may be contested, circumvented, invalidated or limited in scope, any of which could have a material adverse effect on our ability to prevent others from interfering with the commercialization of our products.***

Our patent applications may not result in issued patents, which may have a material adverse effect on our ability to prevent others from commercially exploiting products similar to ours. The status of patents involves complex legal and factual questions and the breadth of claims allowed is uncertain. As a result, we cannot be certain that the patent applications that we file will result in patents being issued, or that our patents and any patents that may be issued to us will afford protection against competitors with similar technology. Numerous patents and pending patent applications owned by others exist in the fields in which we have developed and are developing our technology. In addition to those who may claim priority, any of our existing or pending patents may also be challenged by others on the basis that they are otherwise invalid or unenforceable. Furthermore, patent applications filed in foreign countries are subject to laws, rules and procedures that differ from those of the United States, and thus we cannot be certain that foreign patent applications related to issued U.S. patents will be issued.

Even if our patent applications succeed and we are issued patents in accordance with them, we are still uncertain whether these patents will be contested, circumvented, invalidated or limited in scope in the future. The rights granted under any issued patents may not provide us with meaningful protection or competitive advantages, and some foreign countries provide significantly less effective patent enforcement than in the United States. In addition, the claims under any patents that issue from our patent applications may not be broad enough to prevent others from developing technologies that are similar or that achieve results similar to ours. The intellectual property rights of others could also bar us from licensing and exploiting any patents that issue from our pending applications. In addition, patents issued to us may be infringed upon or designed around by others and others may obtain patents that we need to license or design around, either of which would increase costs and may adversely affect our business, financial condition and results of operations.

## **Risks Related to Our Indebtedness**

*As we endeavor to expand our business, we will incur significant costs and expenses, which could outpace our cash reserves. Unfavorable conditions or disruptions in the capital and credit markets may adversely impact business conditions and the availability of credit.*

We expect to incur additional costs and expenses in the future related to the continued development and expansion of our business, including in connection with expanding our manufacturing capabilities to significantly increase production capacity, developing our products, maintaining and enhancing our research and development operations, expanding our sales, marketing, and business development activities in the United States and internationally, and growing our project management, field services and overall operational capabilities for delivering projects. We do not know whether our revenues will grow rapidly enough to absorb these costs or the extent of these expenses or their impact on our results of operations.

Disruptions in the global capital and credit markets as a result of an economic downturn, economic uncertainty, changing or increased regulation, or failures of significant financial institutions, as well as any negative perceptions about our long-term business prospects or the renewable energy sector as a whole, even if exaggerated or unfounded, could adversely affect our customers' ability to access capital and could adversely affect our access to liquidity needed for business in the future. Our business could be hurt if we are unable to obtain additional capital as required, resulting in a decrease in our revenues and profitability.

*We have debt outstanding and may incur additional debt in the future, which may adversely affect our financial condition and future financial results. Our existing debt agreements contain restrictive covenants that may limit our ability to operate our business.*

As of December 31, 2021, our total consolidated debt outstanding was \$3.8 million, all of which was secured indebtedness with Silicon Valley Bank. Our indebtedness with Silicon Valley Bank contains and any future debt instruments likely will contain, a number of restrictive covenants that impose significant operating and financial restrictions on us, including restrictions our ability to, among other things:

- incur additional debt, including providing guarantees or credit support;
- incur liens securing indebtedness or other obligations;
- make certain investments;
- dispose of assets;
- make certain acquisitions;
- pay dividends or make distributions and make other restricted payments; and
- engage in any new businesses.

As a result of these covenants, our ability to respond to changes in business and economic conditions and engage in beneficial transactions, including to obtain additional financing as needed, may be restricted. Furthermore, our failure to comply with our debt covenants could result in a default under our debt agreements, which could permit the holders to accelerate our obligation to repay the debt. If any of our debt is accelerated, we may not have sufficient funds available to repay it.

Our ability to make scheduled payments of principal and interest and other required repayments depends on our future performance, which is subject to economic, financial, competitive and other factors beyond our control. Our business may not generate cash flows from operations in the future sufficient to service our debt and make necessary capital expenditures. If we are unable to generate such cash flows, we may be required to adopt one or more alternatives, such as selling assets, restructuring operations, restructuring debt or obtaining additional equity capital on terms that may be onerous or dilutive.

We may incur additional indebtedness in the future in the ordinary course of business, which could include onerous restrictions on us. If new debt is added to current debt levels, the risks described above could intensify. Our debt agreements contain representations and warranties, affirmative and negative covenants, and events of default that entitle the lenders to cause our indebtedness under such debt agreements to become immediately due and payable.

*We may need additional capital in the future, and it may not be available on acceptable terms, if at all.*

We may need to access the debt and equity capital markets. However, these sources of financing may not be available on acceptable terms, or at all. Our ability to obtain additional financing will be subject to a number of factors, including market conditions, our operating performance, investor sentiment generally or about the renewable energy sector

specifically and our ability to incur additional debt in compliance with agreements governing our then-outstanding debt. These factors may make the timing, amount, terms or conditions of additional financings unattractive to us. If we raise additional funds by issuing equity, equity-linked or debt securities, those securities may have rights, preferences or privileges senior to the rights of our currently issued and outstanding equity or debt, and our existing stockholders may experience dilution. If we are unable to generate sufficient funds from operations or raise additional capital, our successful operation and growth could be impeded.

***We are subject to certain restrictions and obligations on our business as a result of grants and/or loans received under certain governmental programs and we may be subject to similar or other restrictions to the extent we utilize governmental grants in the future.***

Some of our research has been funded by grants from U.S. government agencies. In conjunction with the Advanced Research Projects Agency-Energy grant we received from the Department of Energy, we granted to the United States a non-exclusive, nontransferable, irrevocable, paid-up license to practice or have practiced for or on behalf of the United States inventions related to iron flow technology and made within the scope of the grant. When new technologies are developed with U.S. government funding, the government obtains certain rights in any resulting patents and technical data, generally including, at a minimum, a nonexclusive license authorizing the government to use the invention or technical data for noncommercial purposes. U.S. government funding must be disclosed in any resulting patent applications, and our rights in such inventions will normally be subject to government license rights, periodic progress reporting, foreign manufacturing restrictions and march-in rights. Therefore, if we failed to disclose to the Department of Energy an invention made with grant funds that we disclosed to patent counsel or for publication, or if we elect not to retain title to the invention, the United States may request that title to the subject invention be transferred to it.

March-in rights refer to the right of the U.S. government, under certain limited circumstances, to require us to grant a license to technology developed under a government grant to a responsible applicant or, if we refuse, to grant such a license itself. March-in rights can be triggered if the government determines that we have failed to work sufficiently towards achieving practical application of a technology or if action is necessary to alleviate health or safety needs, to meet requirements of federal regulations or to give preference to U.S. industry. If we breach the terms of our grants, the government may gain rights to the intellectual property developed in our related research. The government's rights in our intellectual property may lessen its commercial value, which could adversely affect our performance.

To the extent we utilize governmental grants in the future, the governmental entities involved may retain certain rights in technology that we develop using such grant money. These rights could restrict our ability to fully capitalize upon the value of this research by reducing total revenues that might otherwise be available since such governmental rights may give the government the right to practice the invention without payment of royalties if we do not comply with applicable requirements. Such grants and other forms of government incentives may also subject us to additional disclosure or reporting requirements.

#### **Risks Related to the Business Combination and STWO**

***We may face litigation and other risks as a result of material weaknesses in our internal control over financial reporting.***

On April 12, 2021, the staff of the SEC issued a public statement entitled "Staff Statement on Accounting and Reporting Considerations for Warrants issued by Special Purpose Acquisition Companies" (the "SEC Staff Statement"). Following the issuance of the SEC Staff Statement, after consultation with Marcum LLP ("Marcum"), STWO's independent registered public accounting firm, our management and the audit committee of our board of directors (the "Audit Committee") concluded that it was appropriate to restate the previously issued audited financial statements of STWO as of December 31, 2020 and for the period from STWO's inception through December 31, 2020.

In preparing STWO's unaudited condensed consolidated financial statements as of and for the quarterly period ended September 30, 2021, we have re-evaluated STWO's application of ASC 480-10-S99-3A to its accounting classification of its outstanding Class A ordinary shares, par value \$0.0001 per share (the "Public Shares"), issued as part of the units sold in the STWO IPO on September 21, 2020. Historically, a portion of the Public Shares was classified as permanent equity to maintain shareholders' equity greater than \$5 million on the basis that STWO would not redeem its Public Shares in an amount that would cause its net tangible assets to be less than \$5,000,001, as described in STWO's memorandum and articles of association (the "Charter"). Pursuant to such reevaluation, our management has determined that the Public Shares included certain provisions that require classification of all of the Public Shares as temporary equity regardless of the net tangible assets redemption limitation contained in the Charter. In addition, in connection with the change in presentation for the Public Shares, we determined we should restate STWO's earnings per share calculation to allocate income and losses shared pro rata between the two classes of shares. This presentation contemplates a business

combination as the most likely outcome, in which case, both classes of shares share pro rata in the income and losses of STWO.

Therefore, on November 22, 2021, our management and Audit Committee concluded that STWO's previously issued (i) audited balance sheet as of September 21, 2020, as previously restated in STWO's Annual Report on Form 10-K, as amended, for the fiscal year ended December 31, 2020, filed with the SEC on May 13, 2021 (the "2020 Form 10-K/A No. 1"), (ii) audited financial statements included in the 2020 Form 10-K/A No. 1, (iii) unaudited interim financial statements included in the Form 10-Q for the quarterly period ended September 30, 2020 as previously restated in the 2020 Form 10-K/A No. 1; (iv) unaudited interim financial statements included in STWO's Quarterly Report on Form 10-Q for the quarterly period ended March 31, 2021, filed with the SEC on May 13, 2021; and (v) unaudited interim financial statements included in STWO's Quarterly Report on Form 10-Q for the quarterly period ended June 30, 2021, filed with the SEC on August 11, 2021 (collectively, the "Affected Periods"), should be restated to report all Public Shares as temporary equity and should no longer be relied upon.

As such, we restated STWO's financial statements for the Affected Periods in our second amended annual report on Form 10-K/A filed with the SEC on December 3, 2021, our first amended quarterly report on Form 10-Q/A for the period ended March 31, 2021 and our first amended quarterly report on Form 10-Q/A for the period ended June 30, 2021, each filed with the SEC on December 6, 2021, and our Quarterly Report on Form 10-Q for the quarterly period ended September 30, 2021, filed with the SEC on November 22, 2021.

As part of the restatements, we identified material weaknesses in our internal controls over financial reporting. As a result of these material weaknesses, the restatements, the change in accounting for the warrants, the reclassification of Class A ordinary shares, and other matters raised or that may in the future be raised by the SEC, we face potential for litigation or other disputes which may include, among others, claims invoking the federal and state securities laws, contractual claims or other claims arising from the restatements and material weaknesses in our internal control over financial reporting and the preparation of our financial statements. As of the date of this Annual Report on Form 10-K, we have no knowledge of any such litigation or dispute. However, we can provide no assurance that such litigation or dispute will not arise in the future. Any such litigation or dispute, whether successful or not, could have a material adverse effect on our business, results of operations and financial condition.

***As a result of our Business Combination with a special purpose acquisition company, regulatory obligations may impact us differently than other publicly traded companies.***

On October 8, 2021, we consummated the Business Combination, pursuant to which we became a publicly traded company. As a result of this transaction, regulatory obligations have, and may continue, to impact us differently than other publicly traded companies. For instance, the SEC and other regulatory agencies may issue additional guidance or apply further regulatory scrutiny to companies like us that have completed a business combination with a special purpose acquisition company. Managing this regulatory environment, which has and may continue to evolve, could divert management's attention from the operation of our business, negatively impact our ability to raise additional capital when needed, or have an adverse effect on the price of our Common Stock.

#### **Risks Related to our Common Stock and Warrants**

***The price of our Common Stock may be volatile.***

The price of our Common Stock may fluctuate due to a variety of factors, including:

- changes in the industries in which we and our customers operate;
- variations in our operating performance and the performance of our competitors in general;
- material and adverse impact of the COVID-19 pandemic on the markets and the broader global economy;
- actual or anticipated fluctuations in our quarterly or annual operating results;
- the public's reaction to our press releases, our other public announcements and our filings with the 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;
- changes in laws and regulations affecting our business;
- commencement of, or involvement in, litigation involving us;
- changes in our capital structure, such as future issuances of securities or the incurrence of additional debt;

- publication of research reports by securities analysts about us or our competitors or our industry;
- sales of shares of our Common Stock by our existing stockholders;
- the volume of shares of our Common Stock available for public sale; and
- general economic and political conditions such as recessions, interest rates, fuel prices, foreign currency fluctuations, international tariffs, social, political and economic risks, hostilities or the perception that hostilities may be imminent, military conflict and acts of war, including an escalation of the situation in the Ukraine and the related response, including sanctions or other restrictive actions, by the United States and/or other countries or terrorism.

These market and industry factors may materially reduce the market price of our Common Stock regardless of our operating performance.

In addition, we have been and in the future may again be the subject of a report issued by activist short sellers. Any such report, even if it contains false and misleading statements about our company, may cause our stock price to experience volatility.

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

Sales of a substantial number of shares of our Common Stock in the public market could occur at any time. 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 our Common Stock.

On December 15, 2021, we filed a registration statement to register shares reserved for future issuance under our equity compensation plans. Pursuant to that registration statement, subject to the satisfaction of applicable vesting restrictions, the shares issued upon exercise of outstanding stock options will be available for immediate resale in the public market.

Certain holders of shares of our common stock have rights, subject to certain conditions, to require us to file registration statements covering their shares or to include their shares in registration statements that we may file for ourselves or other stockholders. Registration of these shares under the Securities Act would result in the shares becoming freely tradeable in the public market, subject to the restrictions of Rule 144 in the case of our affiliates. Any sales of securities by these stockholders could have a material adverse effect on the market price for our common stock. Sales of our Common Stock pursuant to the exercise of registration rights may make it more difficult for us to sell equity securities in the future at a time and at a price that we deem appropriate. These sales also could cause the trading price of our Common Stock to fall and make it more difficult for you to sell shares of our Common Stock at a time and price that you deem appropriate.

***We have warrants outstanding that are exercisable for our Common Stock, which, if exercised, would increase the number of shares eligible for future resale in the public market and result in dilution to our shareholders.***

Outstanding Public Warrants to purchase an aggregate of 8,333,287 shares of our Common Stock became exercisable on November 7, 2021 in accordance with the terms of the warrant agreement governing those securities, outstanding Private Placement Warrants to purchase an aggregate of 3,500,000 shares of our Common Stock became exercisable at Closing in accordance with the Sponsor Letter Agreement, and outstanding Private Placement Warrants to purchase an additional 583,334 shares of our Common Stock became exercisable on November 9, 2021, upon the occurrence of earnout milestone events pursuant to the Sponsor Letter Agreement and the Merger Agreement (the “Earnout Milestone Events”). The exercise price of each of these warrants is \$11.50 per share.

To the extent such warrants are exercised, additional shares of our Common Stock will be issued, which will result in dilution to the 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 prevailing market prices of our Common Stock.

***The Public Warrants may be amended in a manner adverse to a holder if holders of 65% of the then outstanding Public Warrants approve of such amendment.***

Our warrants were issued in registered form under a warrant agreement between Continental Stock Transfer & Trust Company, as warrant agent, and STWO. 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 or correct any mistake, but requires the approval by the holders of 65% of the then-outstanding Public Warrants to make any change that adversely affects the interests of the registered holders of Public Warrants. Accordingly, we may amend the terms of the Public Warrants in a manner adverse to a holder if holders of 65% of the then-outstanding Public Warrants approve of such

amendment and, solely with respect to any amendment to the terms of the Private Placement Warrants or any provision of the warrant agreement with respect to the Private Placement Warrants, 65% of the number of the then outstanding Private Placement Warrants. Although our ability to amend the terms of the Public Warrants with the consent of 65% of the then-outstanding Public Warrants is unlimited, examples of such amendments could be amendments to, among other things, increase the exercise price of the warrants, convert the warrants into cash, shorten the exercise period or decrease the number of shares of our Common Stock purchasable upon exercise of a warrant.

***We may redeem your unexpired warrants prior to their exercise at a time that is disadvantageous to you, thereby making your warrants worthless.***

We have the ability to redeem the outstanding Public Warrants at any time after they become exercisable and prior to their expiration, at a price of \$0.01 per warrant, provided that the closing price of our Common Stock equals or exceeds \$18.00 per share (as adjusted for share subdivisions, share dividends, rights issuances, subdivisions, reorganizations, recapitalizations and the like) for any 20 trading days within a 30 trading-day period ending on the third trading day prior to proper notice of such redemption and provided that certain other conditions are met. If and when the 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. As a result, we may redeem the warrants as set forth above even if the holders are otherwise unable to exercise the warrants. Redemption of the outstanding warrants could force you to (i) exercise your warrants and pay the exercise price therefor at a time when it may be disadvantageous for you to do so, (ii) sell your warrants at the then-current market price when you might otherwise wish to hold your warrants or (iii) accept the nominal redemption price which, at the time the outstanding warrants are called for redemption, we expect would be substantially less than the market value of your warrants.

In addition, we have the ability to redeem the outstanding Public Warrants at any time after they become exercisable and prior to their expiration, at a price of \$0.10 per warrant upon a minimum of 30 days' prior written notice of redemption provided that the closing price of the our Common Stock equals or exceeds \$10.00 per share (as adjusted for adjustments to the number of shares issuable upon exercise or the exercise price of a warrant) for any 20 trading days within a 30 trading-day period ending on the third trading day prior to proper notice of such redemption and provided that certain other conditions are met, including that holders will be able to exercise their warrants prior to redemption for a number of shares of Common Stock determined based on the redemption date and the fair market value of our Common Stock. The value received upon exercise of the warrants (1) 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 (2) may not compensate the holders for the value of the warrants, including because the number of ordinary shares received is capped at 0.361 shares of Common Stock per warrant (subject to adjustment) irrespective of the remaining life of the warrants.

None of the Private Placement Warrants will be redeemable by us as so long as they are held by the Sponsor or its permitted transferees, except under certain circumstances.

***We do not expect to declare any dividends in the foreseeable future.***

We do not anticipate declaring any cash dividends to holders of the Common Stock in the foreseeable future. Consequently, investors may need to rely on sales of their shares after price appreciation, which may not occur for some time or not at all, as the only way to realize any future gains on their investment.

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

Our Common Stock is listed on the NYSE under the symbol "GWH." If the NYSE delists our securities from trading on its exchange for failure to meet the listing standards and we are not able to list such securities on another national securities exchange, we expect such securities could be quoted on an over-the-counter market. If this were to occur, we and our stockholders could face significant material adverse consequences including:

- a limited availability of market quotations for our securities;
- reduced liquidity for our securities;
- a limited amount of news and analyst coverage; and
- a decreased ability to issue additional securities or obtain additional financing in the future.

***Reports published by analysts, including projections in those reports that differ from our actual results, could adversely affect the price and trading volume of our Common Stock.***

Securities research analysts may establish and publish their own periodic projections for us. These projections may vary widely and may not accurately predict the results we actually achieve. Our share price may decline if our actual results do not match the projections of these securities research analysts. Similarly, if one or more of the analysts who write reports

on us downgrades our stock or publishes inaccurate or unfavorable research about our business, our share price could decline. If one or more of these analysts ceases coverage of us or fails to publish reports on us regularly, our share price or trading volume could decline.

***Provisions in our amended and restated certificate of incorporation and amended and restated bylaws and Delaware law might discourage, delay or prevent a change in control of our company or changes in our management and, therefore, depress the market price of our Common Stock.***

Our amended and restated certificate of incorporation and amended and restated bylaws contain provisions that could delay or prevent a change of control of our company or changes in our board of directors that our stockholders might consider favorable. These provisions, among other things:

- establish a classified board of directors so that not all members of our board are elected at one time;
- permit only the board of directors to establish the number of directors and fill vacancies on the board;
- provide that directors may only be removed “for cause” and only with the approval of a majority of the voting power of the issued and outstanding capital stock of the Company entitled to vote in the election of directors;
- authorize the issuance of “blank check” preferred stock that our board could use to implement a stockholder rights plan (also known as a “poison pill”);
- eliminate the ability of our stockholders to call special meetings of stockholders;
- prohibit stockholder action by written consent, which requires all stockholder actions to be taken at a meeting of our stockholders;
- prohibit cumulative voting by stockholders at any election of directors;
- authorize our board of directors to amend the bylaws;
- establish advance notice requirements for nominations for election to our board or for proposing matters that can be acted upon by stockholders at annual stockholder meetings; and
- require a super-majority vote of stockholders to amend some provisions described above.

In addition, Section 203 of the DGCL, prohibits a publicly-held Delaware corporation from engaging in a business combination with an interested stockholder, generally a person which together with its affiliates owns, or within the last three years has owned, 15% of our voting stock, for a period of three years after the date of the transaction in which the person became an interested stockholder, unless the business combination is approved in a prescribed manner.

Any provision of our amended and restated certificate of incorporation, amended and restated bylaws or Delaware law that has the effect of delaying or preventing a change in control could limit the opportunity for our stockholders to receive a premium for their shares of our capital stock and could also affect the price that some investors are willing to pay for our Common Stock.

***Our amended and restated bylaws provide that the Court of Chancery of the State of Delaware and the federal district courts of the United States of America will be the 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 or employees.***

Our amended and restated bylaws provide that the Court of Chancery of the State of Delaware (or, if the Court of Chancery does not have jurisdiction, another State court in Delaware or the federal district court for the District of Delaware) is the exclusive forum for the following (except for any claim as to which such court determines that there is an indispensable party not subject to the jurisdiction of such court (and the indispensable party does not consent to the personal jurisdiction of such court within 10 days following such determination), which is vested in the exclusive jurisdiction of a court or forum other than such court or for which such court does not have subject matter jurisdiction):

- any derivative action or proceeding brought on our behalf;
- any action asserting a claim of breach of fiduciary duty owed by any director, stockholder, officer or other employee of the Company to the Company or to the Company’s stockholders;
- any action arising pursuant to any provision of the DGCL, our amended and restated certificate of incorporation or our amended and restated bylaws; and
- any action asserting a claim against us that is governed by the internal affairs doctrine.

This provision would not apply to suits brought to enforce a duty or liability created by the Securities Act, the Exchange Act or any other claim for which the U.S. federal courts have exclusive jurisdiction.

Our amended and restated bylaws further provide that, unless the Company consents in writing to the selection of an alternative forum, the federal district courts of the United States of America will be the exclusive forum for resolving any complaint asserting a cause of action arising under the Securities Act. We note that investors cannot waive compliance with the federal securities laws and the rules and regulations thereunder.

These 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 directors, officers or other employees, which may discourage lawsuits against us and our directors, officers and other employees. Any person or entity purchasing or otherwise acquiring any interest in any of our securities shall be deemed to have notice of and consented to these provisions. There is uncertainty as to whether a court would enforce such provisions, and the enforceability of similar choice of forum provisions in other companies' charter documents has been challenged in legal proceedings. While the Delaware courts have determined that such choice of forum provisions are facially valid, a stockholder may nevertheless seek to bring a claim in a venue other than those designated in the exclusive forum provisions, and there can be no assurance that such provisions will be enforced by a court in those other jurisdictions. If a court were to find these types of provisions to be inapplicable or unenforceable, and if a court were to find the exclusive forum provision in our amended and restated bylaws to be inapplicable or unenforceable in an action, we may incur additional costs associated with resolving the dispute in other jurisdictions, which could materially adversely affect our business.

***Claims for indemnification by our directors and officers may reduce our available funds to satisfy successful third-party claims against us and may reduce the amount of money available to us.***

Our amended and restated certificate of incorporation and amended and restated bylaws provide that we will indemnify our directors and officers, in each case to the fullest extent permitted by Delaware law.

In addition, as permitted by Section 145 of the DGCL, our amended and restated bylaws and our indemnification agreements that we have entered into with our directors and officers provide that:

- we indemnify our directors and officers for serving us in those capacities or for serving other business enterprises at our request, to the fullest extent permitted by Delaware law. Delaware law provides that a corporation may indemnify such person if such person acted in good faith and in a manner such person reasonably believed to be in or not opposed to the best interests of the registrant and, with respect to any criminal proceeding, had no reasonable cause to believe such person's conduct was unlawful;
- we may, in our discretion, indemnify employees and agents in those circumstances where indemnification is permitted by applicable law;
- we are required to advance expenses, as incurred, to our directors and officers in connection with defending a proceeding, except that such directors or officers shall undertake to repay such advances if it is ultimately determined that such person is not entitled to indemnification;
- we are not obligated, pursuant to our amended and restated bylaws, to indemnify a person with respect to proceedings initiated by that person against us or our other indemnitees, except with respect to proceedings authorized by our board of directors or brought to enforce a right to indemnification;
- the rights conferred in our amended and restated bylaws are not exclusive, and we are authorized to enter into indemnification agreements with our directors, officers, employees and agents and to obtain insurance to indemnify such persons; and
- we may not retroactively amend our amended and restated bylaw provisions to reduce our indemnification obligations to directors; officers, employees and agents.

While we maintain a directors' and officers' insurance policy, such insurance may not be adequate to cover all liabilities that we may incur, which may reduce our available funds to satisfy third-party claims and may materially adversely affect our cash position.

#### **ITEM 1B. UNRESOLVED STAFF COMMENTS**

None.

#### **ITEM 2. PROPERTIES**

Our corporate headquarters is located in Wilsonville, Oregon. The approximately 200,000 square foot facility contains both our corporate and administrative functions as well as our automated battery manufacturing line. Currently, this facility's

semi-automated production line has the capacity to manufacture about 250 MWh of batteries annually. We have procured a second semi-automated production line (250 MWh) that is expected to be installed in the second quarter of 2022, and we have a fully automated line under contract (250 MWh) that is expected to be installed in the fourth quarter of 2022.

Over time, we plan to increase efficiency at the Wilsonville facility to scale manufacturing capacity up to 2,000 MWh. We also envision opening additional manufacturing facilities globally. This global expansion plan may include the following levers that are currently under consideration:

- Strategic investments in the supply chain to grow capacity;
- Rollout of redesigned automation cells, which we expect will increase efficiency in production;
- Energy Warehouse and Energy Center production expansion to Europe and/or Australia;
- Production of power modules in Europe; and
- Vertical integration of power module compartments.

### **ITEM 3. LEGAL PROCEEDINGS**

From time to time, we may become involved in legal proceedings arising in the ordinary course of our business. We are not currently a party to any material legal proceedings, nor, to our knowledge, is any material legal proceeding threatened against us. In the future, we may become involved in legal proceedings that arise in the ordinary course of business, the outcome of which, if determined adversely to us, could individually or in the aggregate have a material adverse effect on our business, financial condition and results of operations.

### **ITEM 4. MINE SAFETY DISCLOSURES**

Not applicable.

## PART II

### ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASE OF EQUITY SECURITIES

#### Market Information and Holders

Our Common Stock is listed on the NYSE under the symbol "GWH" and our Public Warrants are listed on the NYSE under the symbol "GWH.W". As of February 28, 2022, there were 166 holders of record of our Common Stock and 4 holders of record of our Public Warrants. The actual number of stockholders of our Common Stock is greater than this number of record holders and includes stockholders who are beneficial owners but whose shares of Common Stock are held in street name by banks, brokers and other nominees.

#### Dividend Policy

We have not paid any cash dividends on the Common Stock to date. We may retain future earnings, if any, for future operations, expansion and debt repayment and have no current plans to pay cash dividends for the foreseeable future. Any decision to declare and pay dividends in the future will be made at the discretion of the board of directors and will depend on, among other things, our results of operations, financial condition, cash requirements, contractual restrictions and other factors that the board of directors 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. We do not anticipate declaring any cash dividends to holders of the Common Stock in the foreseeable future.

#### Issuer Purchases of Equity Securities

During the year ended December 31, 2021, we did not purchase any of our equity securities that are registered under Section 12(b) of the Exchange Act.

#### Securities Authorized for Issuance Under Equity Compensation Plans

The information required by Item 5 of Form 10-K regarding equity compensation plans is incorporated herein by reference to Item 12 of Part III of this Annual Report.

#### ITEM 6. [RESERVED]

### ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS.

#### Overview

ESS is a long-duration energy storage company specializing in iron flow battery technology. We design and produce long-duration batteries predominantly using earth-abundant materials that can be cycled over 20,000 times without capacity fade. Because we designed our batteries to operate using an electrolyte of primarily salt, iron and water, they are non-toxic and substantially recyclable. Our batteries provide flexibility to grid operators and energy assurance for commercial and industrial customers. Our technology addresses energy delivery, duration and cycle-life in a single battery platform that compares favorably to lithium-ion batteries, the most widely deployed alternative technology. Using our iron flow battery technology, we are developing two products, each of which is able to provide reliable, safe, long-duration energy storage. As of December 31, 2021, we did not have any second-generation products fully deployed and we had not yet met revenue recognition criteria, but we began shipping our second-generation Energy Warehouses in the third quarter of 2021 and were in the process of installing and commissioning such units. With each battery deployed, we will further our mission to accelerate the transition to a zero-carbon energy future with increased grid reliability.

Our long-duration iron flow batteries are the product of nearly 50 years of scientific advancement. Our founders, Craig Evans and Dr. Julia Song, began advancing this technology in 2011 and formed ESS. Our team has significantly enhanced the technology, improved the round-trip efficiency and developed an innovative and patented solution to the hydroxide build-up problem that plagued previous researchers developing iron flow batteries. Our proprietary solution to eliminate the hydroxide formation is known as the Proton Pump, and it works by utilizing hydrogen generated by side reactions on the negative electrode. The Proton Pump converts the hydrogen back into protons in the positive electrolyte. This process eliminates the hydroxide and stabilizes the electrolytes' pH levels. The Proton Pump allows the electrolyte to be used for over 20,000 cycles without any capacity fade.

Our first energy storage product, the Energy Warehouse, is our "behind-the-meter" solution (referring to solutions that are located on the customers' premise, behind the service demarcation with the utility) that offers energy storage ranging from four to 12-hour duration. Our second, larger scale energy storage product, the Energy Center, is designed for "front-of-the-meter" (referring to solutions that are located outside the customer's premise, typically by the utility or by third-party

providers who sell energy into the grid, often known as independent power producers) deployments specifically for utility and large commercial and industrial consumers.

### **The Business Combination**

On October 8, 2021, ESS consummated the Business Combination. As a result, Legacy ESS merged with Merger Sub, with Legacy ESS surviving as a wholly owned subsidiary of STWO, which changed its name to “ESS Tech, Inc.” The increase in cash resulting from the Business Combination will be used to fund our corporate growth strategy related to the commercial sale of our second-generation energy storage solution and the scaling of our manufacturing operations to meet customer demand. The cash raised from the Business Combination will also be used to fund investments in personnel and research and development as well as provide liquidity for the funding of our ongoing operating expenses.

The Business Combination was accounted for as a reverse recapitalization. Legacy ESS was deemed the accounting predecessor and the combined entity is the successor SEC registrant, meaning that Legacy ESS’ financial statements for previous periods will be disclosed in our future periodic reports filed with the SEC. Under this method of accounting, STWO was treated as the acquired company for financial statement reporting purposes.

As a result of the Business Combination, Legacy ESS became the successor to an SEC-registered and publicly traded company, which has required, and may further require, us to hire additional personnel and implement procedures and processes to address public company regulatory requirements and customary practices. We expect to incur additional annual expenses as a public company for, among other things, directors’ and officers’ liability insurance, director fees, and additional internal and external accounting, legal, and administrative resources, including increased personnel costs, audit and other professional service fees.

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

We believe that our performance and future success depend on several factors that present significant opportunities for us but also pose risks and challenges, including those discussed below and in the section “Item 1A. Risk Factors.”

We believe we have the opportunity to establish high margin unit economics when operating at scale. Our future performance will depend on our ability to deliver on these economies of scale with lower product costs to enable profitable growth. We believe our business model is positioned for scalability due to the ability to leverage the same product platform across our customer base. Further, the manufacturing model is a capital light model and does not require significant capital expenditures when compared to alternative technologies. Significant improvements in manufacturing scale are expected to decrease the cost of materials and direct labor. However, in the near term, we expect our operating expenses to increase as we ramp up our research and development and manufacturing activities including with respect to our supply chain, parts and launch of our second-generation Energy Warehouses as well as higher general and administrative expenses related to public company readiness. Achievement of margin targets and cash flow generation is dependent on finalizing development and manufacturing of Energy Centers.

Our near- and medium-term revenue is expected to be generated from our second-generation Energy Warehouses. We believe our unique technology provides a compelling value proposition for favorable margins and unit economics in the energy storage industry in the future.

### ***COVID-19***

The rapid global spread of the COVID-19 pandemic since December 2019 has disrupted supply chains and affected production and sales across a range of industries, and continues to impact the United States and other countries throughout the world. There have already been multiple waves of the COVID-19 pandemic and COVID-19 cases continue to surge in certain areas of the world, including in certain countries that were initially successful at containing the virus. The evolution of the disease, the extent of its economic impact and the results of steps taken and yet to be taken by governments and financial institutions are still unknown. Due to the number of variables involved, the significance and the duration of the pandemic’s financial impact are difficult to determine. The extent of the impact of COVID-19 on our operational and financial performance will depend on certain developments, including the duration and spread of the virus, and the impact on our customers, employees and vendors. The ultimate outcome of these matters is uncertain and, accordingly, the impact on our financial condition or results of operations is also uncertain.

To support the health and well-being of our employees, customers, partners and communities, in March 2020, we temporarily suspended operations at our Wilsonville, Oregon manufacturing facility, and also required all of our non-essential employees to work remotely. This represented approximately 20% of our workforce at the time. While we resumed operations in the manufacturing facility within several weeks, we instituted a split schedule shift, staggered workdays, and significant limitations on various areas of our physical building. Currently, we continue to evaluate our ability to operate in light of recent resurgences of COVID-19, including the emergence of new variant strains of COVID-19 (such as the omicron variant), which have and may in the future necessitate renewed government restrictions, and the

advisability of continuing operations, based on federal, state and local guidance, evolving data concerning the pandemic and the best interests of our employees, customers and stockholders. We have issued several force majeure notices to customers as a result of delays caused by COVID-19 and the impact of COVID-19 on such agreements, or the applicable agreements' termination provisions, is uncertain and could result in the termination of such agreements.

### **Components of Results of Operations**

As the Business Combination is accounted for as a reverse recapitalization, the operating results included in this discussion reflect the historical operating results of Legacy ESS prior to the Business Combination and the combined results of ESS following the closing of the Business Combination. The assets and liabilities of the Company are stated at their historical cost.

#### ***Revenue***

We expect to earn revenue from the sale of our energy storage products and from service contracts. As of December 31, 2021, we did not have any second-generation products fully deployed and we had not yet met revenue recognition criteria, but we began shipping our second-generation Energy Warehouses in the third quarter of 2021 and were in the process of installing and commissioning such units. Revenue recognition will be deferred until customer acceptance has been received for each unit and customer required testing is complete, if applicable, or until we establish a history of successfully obtaining acceptance from each customer. In the near term, as our products are new, this is likely to be a longer process than when our products are more mature and we have more of a history with customer acceptance.

#### ***Operating expenses***

##### *Research and development expenses*

Costs related to research and development consist of direct product development material costs and product development personnel-related expenses, depreciation charges, overhead related costs, consulting services and other direct expenses. Personnel-related expenses consist of salaries, benefits and stock-based compensation. We expect our research and development costs to increase for the foreseeable future as we continue to invest in research and development activities to achieve our product roadmap.

##### *Sales and marketing expenses*

Sales and marketing expenses consist primarily of salaries, benefits and stock-based compensation for marketing and sales personnel and related support teams. To a lesser extent sales and marketing expenses also includes professional services costs and trade show sponsorships. We expect that our sales and marketing expenses will increase over time as we continue to hire additional personnel to scale our business.

##### *General and administrative expenses*

General and administrative expenses consist of personnel-related expenses for our corporate, executive, finance, and other administrative functions, as well as expenses for outside professional services and insurance costs. Personnel-related expenses consist of salaries, benefits, and stock-based compensation. To a lesser extent, general and administrative expense includes depreciation and other allocated costs, such as facility-related expenses, and supplies. We expect our general and administrative expenses to increase for the foreseeable future as we scale headcount with the growth of our business, and as a result of operating as a public company, including compliance with the rules and regulations of the SEC, legal, audit, additional insurance expenses, investor relations activities, and other administrative and professional services.

#### ***Other income (expense)***

##### *Interest expense, net*

Interest expense consists primarily of interest on our notes payable. Interest income consists primarily of earned income on our cash equivalents and restricted cash. These amounts will vary based on our cash, cash equivalents and restricted cash balances, and with market rates.

##### *Loss on revaluation of warrant liabilities*

The loss on revaluation of warrant liabilities consists of periodic fair value adjustments related to Legacy ESS' Series B and C warrants outstanding prior to the Business Combination and the Public Warrants and Private Placement Warrants.

##### *Loss on revaluation of derivative liabilities*

The loss on revaluation of derivative liability consists of periodic fair value adjustments associated with our derivative liability for the Legacy ESS Series C-2 Convertible Preferred Stock issuance right liability and contingently issuable warrants.

*Loss on revaluation of earnout liabilities*

The loss on revaluation of earnout liabilities represents the change in fair value associated with the Earnout Shares (defined below) from the date of the Business Combination through November 9, 2021, the date that the Earnout Milestone Events were achieved. Additionally, the loss on revaluation of earnout liabilities includes periodic fair value adjustments related to the Earnout Warrants.

*Other income (expense)*

Other income and expense consists of various other income and expense items but primarily consists of gain or loss on extinguishment of debt.

**Results of Operations**

***Comparison of Year Ended December 31, 2021 to Year Ended December 31, 2020***

The following table sets forth ESS' operating results for the periods indicated:

(\$ in thousands)	Year Ended December 31,		\$ Change	% Change
	2021	2020		
<b>Operating expenses:</b>				
Research and development	\$ 30,275	\$ 12,896	\$ 17,379	135%
Sales and marketing	3,041	1,158	1,883	163
General and administrative	27,286	3,338	23,948	717
<b>Total operating expenses</b>	<b>60,602</b>	<b>17,392</b>	<b>43,210</b>	<b>248</b>
Loss from operations	(60,602)	(17,392)	(43,210)	248
<b>Other income (expense):</b>				
Interest expense, net	(1,886)	(132)	(1,754)	N/M
Loss on revaluation of warrant liabilities	(37,584)	(1,296)	(36,288)	N/M
Loss on revaluation of derivative liabilities	(223,165)	(11,532)	(211,633)	N/M
Loss on revaluation of earnout liabilities	(154,806)	—	(154,806)	N/M
Other income (expense), net	926	(67)	993	N/M
<b>Total other income (expense)</b>	<b>(416,515)</b>	<b>(13,027)</b>	<b>(403,488)</b>	<b>N/M</b>
Net loss	\$ (477,117)	\$ (30,419)	\$ (446,698)	N/M

N/M = Not meaningful

***Revenue***

No revenue was recognized for the years ended December 31, 2021 or 2020. As of December 31, 2021, we did not have any second-generation products fully deployed and we had not yet met revenue recognition criteria, but we began shipping our second-generation Energy Warehouses in the third quarter of 2021 and were in the process of installing and commissioning such units. Revenue recognition will be deferred until customer acceptance has been received for each unit and customer required testing is complete, if applicable, or until we establish a history of successfully obtaining acceptance from each customer. In the near term, as our products are new, this is likely to be a longer process than when our products are more mature and we have more of a history with customer acceptance. We expect to recognize revenue on the first three units shipped in 2021 during the first quarter of 2022.

***Operating expenses***

*Research and development expenses*

Research and development expenses increased by \$17,379 thousand or 135% from \$12,896 thousand for the year ended December 31, 2020 to \$30,275 thousand for the year ended December 31, 2021. The increase resulted primarily from increased personnel-related expenses due to significant effort on the development of the second-generation Energy Warehouse as well as efforts to create an efficient manufacturing process for our products and an increase in material purchase costs.

*Sales and marketing expenses*

Sales and marketing expenses increased by \$1,883 thousand or 163% from \$1,158 thousand for the year ended December 31, 2020 to \$3,041 thousand for the year ended December 31, 2021. The increase is primarily due to costs incurred for marketing related activities to build awareness of our products' capabilities and increased personnel-related expenses.

*General and administrative expenses*

General and administrative expenses increased by \$23,948 thousand or 717% from \$3,338 thousand for the year ended December 31, 2020 to \$27,286 thousand for the year ended December 31, 2021. The increase is primarily due to fees paid to outside service providers including external banking fees, legal fees covering a variety of corporate matters, accounting fees and external audit fees as well as increased personnel-related expenses including recruiting expenses as we expanded headcount and increased insurance fees.

***Other expense, net***

*Interest expense, net*

Interest expense, net increased by \$1,754 thousand from \$132 thousand for the year ended December 31, 2020 to \$1,886 thousand for the year ended December 31, 2021. The net increase in interest expense resulted primarily from the previously outstanding Bridge Loan that was repaid in connection with the Closing of the Business Combination, including a final payment of \$1.3 million in addition to accrued interest.

*Loss on revaluation of warrant liabilities*

The loss on revaluation of warrant liabilities increased \$36,288 thousand from \$1,296 thousand for the year ended December 31, 2020 to \$37,584 thousand for the year ended December 31, 2021. The loss on revaluation of warrant liabilities increased as a result of a change in the fair value of the warrant liabilities due to ESS' increased equity value.

*Loss on revaluation of derivative liabilities*

The loss on revaluation of the Legacy ESS Series C-2 Convertible Preferred Stock Issuance Right increased \$211,633 thousand from \$11,532 thousand for the year ended December 31, 2020 to \$223,165 thousand for the year ended December 31, 2021 as a result of ESS increased equity value.

*Loss on revaluation of earnout liabilities*

The loss on revaluation of earnout liabilities was \$154,806 thousand for the year ended December 31, 2021, as a result of the change in the value of Common Stock between the Closing of the Business Combination and November 9, 2021, the date that the Earnout Milestone Events were achieved. Additionally, the loss on revaluation of earnout liabilities includes periodic fair value adjustments related to the Earnout Warrants.

*Other income (expense)*

Other expenses were \$67 thousand for the year ended December 31, 2020 compared to other income of \$926 thousand for the year ended December 31, 2021. The other income recognized in the year ended December 31, 2021 is due to the gain on extinguishment recognized upon the forgiveness of the promissory note under the Payroll Protection Program.

**Liquidity and Capital Resources**

Since our inception, we have financed our operations primarily through the issuance of and sale of equity and debt securities and loan agreements.

Legacy ESS' Series C redeemable convertible preferred stock financing agreement provided additional committed funding of up to \$80 million, through the purchase of up to 39,971,716 shares of Legacy ESS Series C-2 Preferred Stock based on the completion of certain milestones at a predetermined price of \$2.00, to certain Series C-1 investors, and collectively referred to as the Series C-2 Purchase Right. In March 2021, Legacy ESS entered into the Series C-2 preferred stock purchase agreement and amendment to the Legacy ESS Series C redeemable convertible preferred stock financing agreement, pursuant to which we issued 5,746,003 shares of Legacy ESS Series C-2 Preferred Stock for \$2.00 per share, totaling \$11.5 million.

On May 6, 2021, we entered into the Merger Agreement. In conjunction with the Merger Agreement, we entered into an amendment to the Series C redeemable convertible preferred stock financing agreement with the two holders of the remaining Series C-2 Purchase Right pursuant to which such holders agreed to waive the milestone conditions and reduce their remaining Series C-2 Purchase Right from 33,726,549 shares of ESS Series C-2 Preferred Stock to 7,994,442 shares in exchange for warrants to purchase up to 21,159,364 shares of ESS Series C-2 Preferred Stock with an exercise price of \$0.0001 per share and the ability to participate in the PIPE Financing. The C-2 warrants and purchase rights were exercised in conjunction with the Business Combination, which closed on October 8, 2021, resulting in proceeds of approximately \$16 million.

During 2020, Legacy ESS entered into an unsecured promissory note with a bank under the PPP administered by the United States Small Business Administration and authorized by the Keeping American Workers Employed and Paid Act, which is part of the CARES Act, enacted on March 27, 2020. The principal amount of the PPP loan was \$936 thousand and

bore interest of 1.0% per year. Principal payments were deferred until August 2021. In July 2021, Legacy ESS applied for and received forgiveness for this PPP loan.

We have a \$1 million note payable with Silicon Valley Bank that is secured by significantly all of our property, except for our intellectual property. The note principal is due in monthly installments of \$28 thousand beginning in March 2019 with an original maturity date of July 1, 2021; however, the maturity date was modified and extended to January 1, 2023. In March 2020, we amended the note payable and borrowed an additional \$4 million. The \$4 million note payable's original maturity date was on January 1, 2023; however, the maturity date was modified and extended to January 1, 2024. The note bears interest at 0.50% below the bank's prime rate (2.75% rate at December 31, 2021).

In July 2021, we entered into an agreement with Silicon Valley Bank providing for a \$20.0 million bridge loan, which was fully drawn and matured on the earlier of January 13, 2022 or consummation of the Business Combination, which ultimately closed on October 8, 2021. The bridge loan bore interest at 9.0%, of which 2.25% was payable monthly and 6.75% paid-in-kind interest was due upon maturity. At maturity, a final payment of \$1.3 million was due in addition to all outstanding principal and accrued interest, all of which was repaid in connection with the Business Combination.

The following table summarizes cash flows from operating, investing and financing activities for the periods presented.

(\$ in thousands)	Years Ended December 31,	
	2021	2020
Net cash used in operating activities	\$ (51,849)	\$ (16,645)
Net cash used in investing activities	(2,767)	(502)
Net cash provided by financing activities	288,454	4,722

***Cash flows from operating activities:***

Our cash flows used in operating activities to date have been primarily comprised of costs related to research and development, manufacturing of our energy storage products, building awareness of our products' capabilities and other general and administrative activities. We expect our expenses related to personnel, manufacturing, research and development, sales and marketing, and general and administrative activities to increase.

Net cash used in operating activities was \$51,849 thousand for the year ended December 31, 2021, which is comprised of net loss of \$477,117 thousand, offset by noncash changes in the fair value of derivative liabilities of \$223,165 thousand, earnout liabilities of \$154,806 thousand, warrant liabilities of \$37,584 thousand, and stock-based compensation of \$7,922 thousand. Net changes in operating assets and liabilities provided \$2,087 thousand of cash driven by an increase in accounts payable and accrued and other current liabilities partially offset by an increase in prepaid expenses and other assets.

Net cash used in operating activities was \$16,645 thousand for the year ended December 31, 2020, which is comprised of net loss of \$30,419 thousand, offset by noncash changes in derivative liabilities of \$11,532 thousand, warrant liabilities of \$1,296 thousand, depreciation of \$436 thousand and stock-based compensation of \$310 thousand. Net changes in operating assets and liabilities provided \$47 thousand of cash driven by a decrease in accrued and other current liabilities and customer deposits partially offset by an increase in accounts payable and increase in prepaid expenses.

***Cash flows from investing activities:***

Our cash flows from investing activities have been comprised primarily of purchases of property and equipment.

Net cash used in investing activities was \$2,767 thousand and \$502 thousand for the years ended December 31, 2021 and 2020, respectively, which relates to purchases of property and equipment.

***Cash flows from financing activities:***

Through December 31, 2021, we have raised capital from the Business Combination and financed our operations through the issuance of debt and equity securities and loan agreements.

Net cash provided by financing activities was \$288,454 thousand for the year ended December 31, 2021 and included \$258,730 thousand in net cash contributions from the Business Combination and PIPE Financing, \$15,559 thousand in proceeds from the exercise of Legacy ESS Series C-2 redeemable convertible preferred stock purchase rights and C-2 warrants upon completion of the Business Combination and \$10,995 thousand in proceeds from warrants exercised. Prior to the Business Combination, we additionally received \$11,461 thousand in proceeds from the sale of Legacy ESS Series C-2 redeemable convertible preferred stock. These cash inflows were partially offset by payments made towards offering costs of \$7,895 thousand.

Net cash provided by financing activities was \$4,722 thousand for the year ended December 31, 2020 and included proceeds from the issuance of notes payable reduced by principal payments on borrowings.

### **Contractual Obligations and Commitments**

Our contractual obligations and other commitments as of December 31, 2021 consist of operating lease commitments and notes payable. We also have a standby letter of credit that serves as security for certain operating leases for office and manufacturing space. The letter of credit is fully secured by restricted certificate of deposit accounts. There was no draw against the letter of credit during the year ended December 31, 2021. Additionally, we are committed to non-cancellable purchase commitments of \$10,160 thousand as of December 31, 2021.

### **Off-Balance Sheet Arrangements**

We are not a party to any off-balance sheet arrangements, including guarantee contracts, retained or contingent interests, or unconsolidated variable interest entities that either have, or are reasonably likely to have, a current or future material effect on our financial statements.

### **Critical Accounting Policies and Estimates**

The preparation of consolidated financial statements in conformity with GAAP requires that management apply accounting policies and make estimates and assumptions that affect amounts reported in the statements. The following accounting policies represent those that management believes are particularly important to the consolidated financial statements and that require the use of estimates, assumptions, and judgments to determine matters that are inherently uncertain.

#### ***Stock-based compensation***

We recognize the cost of stock-based awards granted to employees and directors based on the estimated grant-date fair value of the awards. For awards that vest solely based on a service condition, the cost is recognized on a straight-line basis over the service period, which is generally the vesting period of the award. For awards that vest based on service, performance and market conditions, we recognize stock-based compensation expense when the performance conditions are probable of being achieved. The compensation cost related to awards with market conditions is recognized regardless of whether the market condition is satisfied, if the requisite service is provided. We recognize stock-based compensation costs and reverse previously recognized costs for unvested options in the period forfeitures occur.

We determine the fair value of stock options that vest solely based on a service condition using the Black-Scholes option pricing model, which is impacted by the following assumptions:

- *Expected term*—We determine the expected term based on the average period the stock options are expected to remain outstanding, generally calculated as the midpoint of the stock options' vesting term and contractual expiration period, as we do not have sufficient historical information to develop reasonable expectations about future exercise patterns and post-vesting employment termination behavior.
- *Expected volatility*—The expected volatility rate is based on an average historical stock price volatility of comparable publicly-traded companies in the industry group as there has been no public market for our shares to date.
- *Risk-free interest rate*—The risk-free interest rate is based on the U.S. Treasury yield curve in effect at the time of grant for periods corresponding with the expected term of the option.
- *Expected dividend yield*—We have not paid and do not expect to pay dividends. Consequently, we use an expected dividend yield of zero.

#### ***Fair Value of ESS Series C-2 Preferred Stock Issuance Right***

The Legacy ESS Series C redeemable convertible preferred stock financing agreement provided additional committed funding of up to approximately \$80 million, through the purchase of up to 39,971,716 shares of Legacy ESS Series C-2 Preferred Stock based on the completion of certain operational milestones at a predetermined price of \$2.00, to certain Series C-1 investors. On May 6, 2021, Legacy ESS entered into an amendment to the Legacy ESS Series C redeemable convertible preferred stock financing agreement with the two holders of the remaining Legacy ESS Series C-2 Purchase Right. Under the terms of the amended agreement, in conjunction with a successful Business Combination with STWO, two existing investors purchased 7,994,442 additional shares of Legacy ESS Series C-2 Preferred Stock and received warrants to purchase 21,159,364 shares of Legacy ESS Series C-2 Preferred Stock with an exercise price of \$.00007 per share. The Legacy ESS Series C-2 Purchase Right was eliminated with the consummation of the Business Combination.

We determined that our obligation to issue, and our investors' obligation to purchase, shares of Legacy ESS Series C-2 Preferred Stock at a fixed price represents a freestanding derivative financial instrument and was initially recorded at fair

value. Subsequent changes in fair value at each reporting date are recorded as a component of other income and expense. The value of the Legacy ESS Series C-2 Preferred Stock Issuance Right is determined based on significant inputs not observed in the market. Through the third quarter of 2020, the fair value of the Legacy ESS Series C-2 Preferred Stock Issuance Right was determined using a Black-Scholes option pricing model. Beginning December 31, 2020 and thereafter the fair value of the Legacy ESS Series C-2 Preferred Stock Issuance Right was determined using a Black-Scholes option pricing model with consideration for a remain private scenario and a SPAC transaction scenario as described above. We utilized key assumptions, such as the fair value of the Legacy ESS Series C-2 Preferred Stock, the volatility of peer companies' stock prices, the risk-free interest rate based on the U.S. treasury yield, and the expected term (based on the shorter of remaining term to a significant event or expiration date of the purchase right).

#### ***Convertible Preferred Stock Warrant Liabilities***

Through the consummation of the Business Combination, we accounted for warrants to purchase shares of Legacy ESS Series B Preferred Stock and Legacy ESS Series C Preferred Stock as liabilities at their estimated fair values because these warrants may obligate us to transfer assets to the holders at a future date under certain circumstances, such as a merger, acquisition, reorganization, sale of all or substantially all of our assets, each a change of control event. The warrants were recorded at fair value upon issuance and are subject to remeasurement to fair value at each period end, with any fair value adjustments recognized in the statements of operations and comprehensive loss.

Through the third quarter of 2020, Legacy ESS measured the fair value of its warrant liabilities using unobservable inputs within the Black-Scholes option-pricing model. Beginning December 31, 2020 and thereafter, the fair value of the warrant liabilities was determined using a Black-Scholes option pricing model with consideration for a remain private scenario and a SPAC transaction scenario as described above. We utilized various key assumptions, such as the fair value of the Legacy ESS Series B Preferred Stock and Legacy ESS Series C Preferred Stock, the volatility of peer companies' stock prices, the risk-free interest rate based on the U.S. treasury yield, and the expected term (based on remaining term to a significant event).

All warrants were exercised prior to the consummation of the Business Combination.

#### ***Earnout Liabilities***

Pursuant to the Merger Agreement, the Company was permitted to issue to eligible Legacy ESS securityholders, on a pro rata basis, up to 16,500,000 shares of additional common stock (the "Earnout Shares") less any RSUs issued pursuant to the Incentive RSU Pool, issuable in two equal tranches upon the occurrence of the respective Earnout Milestone Events. The initial fair value of the Earnout Shares was estimated using a model based on multiple stock price paths developed through the use of a Monte Carlo simulation that incorporated into the valuation the possibility that the market condition targets may not be satisfied. The Earnout Milestone Events were achieved on November 9, 2021 and Legacy ESS issued 15,674,965 shares to securityholders.

#### ***Research and Development***

The Company is in the research and development phase. Our product offering relies heavily on new technology currently undergoing development and does not yet meet standard specifications to be sold commercially. Therefore, all related costs are currently accounted for as part of research and development expense in the consolidated statement of operations. The criteria established by the Company to determine when commercialization has been reached includes the length of time the units have been operational in the field and the level of performance at which those units operate. As the Company transitions from the research and development phase and into a full commercial phase, all inventoriable costs will be capitalized. As of December 31, 2021, the criteria for commercialization has not yet been met.

#### ***Revenue Recognition***

Revenue is earned from the sales of energy storage systems and is derived from customer contracts. Revenue is recognized in an amount that reflects the consideration to which the Company expects to be entitled in exchange for transferring the promised goods and/or services to the customer, when or as the Company's performance obligations are satisfied. For product sales of energy storage systems, the Company's performance obligations are satisfied at the point in time when the customer obtains control of the system (i.e. after customer acceptance). Payment terms generally include advance payments to reserve capacity and/or upon issuance of the customer's purchase order, shipment readiness, with the remainder due upon delivery and commissioning of system.

In instances where there are multiple performance obligations in a single contract, we allocate the consideration to the various obligations in the contract based on the relative stand-alone selling price method. When the stand-alone selling price is not observable, revenue is determined based on a best estimate of selling price using cost plus a reasonable margin or by using market data for comparable products.

Revenue recognition will be deferred until customer acceptance has been received for each unit and customer required testing is complete, if applicable, or until we establish a history of successfully obtaining acceptance from each customer. In the near term, as our products are new, this is likely to be a longer process than when our products are more mature and we have more of a history with customer acceptance.

#### **Emerging Growth Company Status**

We are an “emerging growth company” as defined in Section 2(a) of the Securities Act and have elected to take advantage of the benefits of the extended transition period for new or revised financial accounting standards. We expect to remain an emerging growth company at least during the 2022 fiscal year and expect to continue to take advantage of the benefits of the extended transition period, although we may decide to early adopt such new or revised accounting standards to the extent permitted by such standards. This may make it difficult or impossible to compare our financial results with the financial results of another public company that is either not an emerging growth company or is an emerging growth company that has chosen not to take advantage of the extended transition period exemptions because of the potential differences in accounting standards used.

#### **ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK**

Market risk represents the risk of loss that may impact our financial position because of adverse changes in financial market prices and rates. Our market risk exposure is primarily a result of exposure resulting from potential changes in interest rates. We do not hold financial instruments for trading purposes. We maintain cash in bank deposits, which at times may exceed federally insured limits. We have not experienced any losses in such accounts.

##### ***Interest Rate Risk***

Our exposure to changes in interest rates relates primarily to our cash equivalents and restricted cash as well as outstanding notes payable.

As of December 31, 2021, we had cash, cash equivalents and restricted cash of \$240,232 thousand. Cash equivalents and restricted cash are primarily comprised of money market funds and certificates of deposit. Our investment strategy is focused on the preservation of capital and supporting our liquidity requirements. We do not enter into investments for trading or speculative purposes.

As of December 31, 2021 and 2020, we had outstanding variable rate notes payable with an aggregate carrying amount of \$3,769 thousand and \$4,761 thousand, respectively. The notes bear interest at 0.50% below the bank’s prime rate (2.75% at both December 31, 2021 and 2020). A hypothetical 100 basis point change in interest rates would not have a material impact on the interest expense on our notes payable as of December 31, 2021 and 2020.

**ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA**

The following financial statements and report are included in Item 8:

<a href="#">Report of Independent Registered Public Accounting Firm (PCAOB ID: 42)</a>	58
<a href="#">Consolidated Balance Sheets as of December 31, 2021 and 2020</a>	59
<a href="#">Consolidated Statements of Operations and Comprehensive Loss for the years ended December 31, 2021 and 2020</a>	60
<a href="#">Consolidated Statements of Stockholders' Equity (Deficit) for the years ended December 31, 2021 and 2020</a>	61
<a href="#">Consolidated Statements of Cash Flows for the years ended December 31, 2021 and 2020</a>	62
<a href="#">Notes to Consolidated Financial Statements</a>	64

## REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Stockholders and the Board of Directors of ESS Tech, Inc

### Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of ESS Tech, Inc. (the Company) as of December 31, 2021 and 2020, the related consolidated statements of operations and comprehensive loss, stockholders' equity (deficit), and cash flows for each of the two years in the period ended December 31, 2021, 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 each of the two years in the period ended December 31, 2021, in conformity with U.S. generally accepted accounting principles.

### Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the 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. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. 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 financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ Ernst & Young LLP

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

Portland, Oregon

March 3, 2022

**ESS Tech, Inc.**  
**Consolidated Balance Sheets**  
**As of December 31, 2021 and 2020**  
(in thousands, except share and per share data)

	<u>2021</u>	<u>2020</u>
<b>ASSETS</b>		
<b>CURRENT ASSETS:</b>		
Cash and cash equivalents	\$ 238,940	\$ 4,901
Restricted cash	1,217	1,167
Prepaid expenses and other current assets	5,361	793
Total current assets	245,518	6,861
Property and equipment, net	4,501	1,836
Restricted cash	75	326
Other non-current assets	105	—
<b>TOTAL ASSETS</b>	<u>\$ 250,199</u>	<u>\$ 9,023</u>
<b>LIABILITIES AND STOCKHOLDERS' EQUITY (DEFICIT)</b>		
<b>CURRENT LIABILITIES:</b>		
Accounts payable	\$ 1,572	\$ 522
Accrued and other current liabilities	6,487	2,194
Deferred revenue	3,663	—
Notes payable	1,900	5,678
Total current liabilities	13,622	8,394
Notes payable	1,869	19
Derivative liabilities	—	22,911
Warrant liabilities	—	3,329
Earnout warrant liabilities	1,476	—
Public warrant liabilities	18,666	—
Private warrant liabilities	8,855	—
Other non-current liabilities	552	2,258
<b>TOTAL LIABILITIES</b>	45,040	36,911
<b>COMMITMENTS AND CONTINGENCIES (NOTE 11)</b>		
<b>STOCKHOLDERS' EQUITY (DEFICIT):</b>		
Preferred stock, \$0.0001 par value, 200,000,000 shares authorized, none issued and outstanding as of December 31, 2021 and 2020	—	—
Common stock (\$0.0001 par value; 2,000,000,000 shares authorized, 151,839,058 and 58,919,345 shares issued and outstanding as of December 31, 2021 and 2020, respectively)	16	6
Common stock warrants	—	153
Additional paid-in capital	745,753	35,446
Accumulated deficit	(540,610)	(63,493)
Total stockholders' equity (deficit)	205,159	(27,888)
<b>TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY (DEFICIT)</b>	<u>\$ 250,199</u>	<u>\$ 9,023</u>

*See accompanying notes to consolidated financial statements*

**ESS Tech, Inc.**  
**Consolidated Statements of Operations and Comprehensive Loss**  
**Years Ended December 31, 2021 and 2020**  
**(in thousands, except share and per share data)**

	<u>2021</u>	<u>2020</u>
<b>Operating expenses</b>		
Research and development	\$ 30,275	\$ 12,896
Sales and marketing	3,041	1,158
General and administrative	27,286	3,338
<b>Total operating expenses</b>	<u>60,602</u>	<u>17,392</u>
<b>Loss from operations</b>	<u>(60,602)</u>	<u>(17,392)</u>
<b>Other income (expenses)</b>		
Interest expense, net	(1,886)	(132)
Loss on revaluation of warrant liabilities	(37,584)	(1,296)
Loss on revaluation of derivative liabilities	(223,165)	(11,532)
Loss on revaluation of earnout liabilities	(154,806)	—
Other income (expense), net	926	(67)
<b>Total other income (expenses)</b>	<u>(416,515)</u>	<u>(13,027)</u>
<b>Net loss and comprehensive loss to common stockholders</b>	<u>\$ (477,117)</u>	<u>\$ (30,419)</u>
Net loss per share - basic and diluted	<u>\$ (5.73)</u>	<u>\$ (0.52)</u>
Weighted average shares used in per share calculation - basic and diluted	<u>83,256,431</u>	<u>58,880,742</u>

*See accompanying notes to consolidated financial statements*

**ESS Tech, Inc.**  
**Consolidated Statements of Stockholders' Equity (Deficit)**  
**Years Ended December 31, 2021 and 2020**  
**(in thousands, except share and per share data)**

	Redeemable Convertible Preferred Stock		Common Stock		Common Stock Warrants	Additional Paid-In Capital	Accumulated Deficit	Total Stockholders' Deficit
	Shares	Amount	Shares	Amount				
Balance as of December 31, 2019	32,865,949	\$ 34,372	7,060,668	\$ 1	\$ 153	\$ 762	\$ (33,074)	\$ (32,158)
Retroactive application of recapitalization	(32,865,949)	(34,372)	51,749,678	5	—	34,367	—	34,372
Balance as of December 31, 2019 after effect of reverse recapitalization (Note 3)	—	—	58,810,346	6	153	35,129	(33,074)	2,214
Issuance of Legacy ESS common stock upon exercise of stock options	—	—	108,999	—	—	7	—	7
Stock-based compensation	—	—	—	—	—	310	—	310
Net loss	—	—	—	—	—	—	(30,419)	(30,419)
Balance as of December 31, 2020	—	—	58,919,345	6	153	35,446	(63,493)	(27,888)
Issuance of Legacy ESS Redeemable Convertible Preferred Stock	—	—	5,746,003	1	—	29,515	—	29,516
Issuance of Legacy ESS common stock upon exercise of stock options	—	—	2,482,958	—	—	664	—	664
Issuance of Legacy ESS common stock upon exercise of warrants	—	—	3,398,214	—	(153)	26,338	—	26,185
Issuance of Legacy ESS Series C-2 Redeemable Convertible Preferred Stock upon exercise of C-2 Purchase Right and warrant	—	—	29,153,806	3	—	238,480	—	238,483
Net Business Combination and PIPE Financing	—	—	35,495,281	4	—	128,913	—	128,917
Issuance of common stock upon achievement of earnout	—	—	15,674,965	2	—	263,338	—	263,340
Issuance of common stock upon exercise of options	—	—	13,112	—	—	7	—	7
Issuance of common stock upon exercise of warrants	—	—	955,374	—	—	15,130	—	15,130
Stock-based compensation expense	—	—	—	—	—	7,922	—	7,922
Net loss	—	—	—	—	—	—	(477,117)	(477,117)
Balance as of December 31, 2021	—	\$ —	151,839,058	\$ 16	\$ —	\$ 745,753	\$ (540,610)	\$ 205,159

*See accompanying notes to consolidated financial statements*

**ESS Tech, Inc.**  
**Consolidated Statements of Cash Flows**  
**For the Years Ended December 31, 2021 and 2020**  
(in thousands)

	2021	2020
<b>CASH FLOWS FROM OPERATING ACTIVITIES:</b>		
Net loss	\$ (477,117)	\$ (30,419)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation	572	436
Non-cash interest expense	80	91
Stock-based compensation expense	7,922	310
Loss on extinguishment of debt	—	62
Change in fair value of warrant liabilities	37,584	1,296
Change in fair value of derivative liabilities	223,165	11,532
Change in earnout liabilities	154,806	—
PPP loan forgiveness	(948)	—
Changes in operating assets and liabilities:		
Prepaid expenses and other assets	(4,673)	(135)
Accounts payable	886	(221)
Deferred revenue, current	3,663	—
Accrued and other liabilities	2,211	403
Net cash used in operating activities	(51,849)	(16,645)
<b>CASH FLOWS FROM INVESTING ACTIVITIES:</b>		
Purchases of property and equipment	(2,767)	(502)
Net cash used in investing activities	(2,767)	(502)
<b>CASH FLOWS FROM FINANCING ACTIVITIES:</b>		
Borrowings on notes payable	20,000	4,936
Principal payments on notes payable	(21,067)	(221)
Proceeds from stock options exercised	671	7
Net cash contributions from Business Combination and PIPE Financing	258,730	—
Payments made towards offering costs	(7,895)	—
Proceeds from warrants exercised	10,995	—
Proceeds from exercise of Legacy ESS Series C-2 redeemable convertible preferred stock purchase rights and C-2 warrants upon Business Combination	15,559	—
Proceeds from sale of Legacy ESS Series C-2 redeemable convertible preferred stock, net of issuance costs	11,461	—
Net cash provided by financing activities	288,454	4,722
<b>NET CHANGE IN CASH, CASH EQUIVALENTS AND RESTRICTED CASH</b>	<b>233,838</b>	<b>(12,425)</b>
<b>CASH, CASH EQUIVALENTS AND RESTRICTED CASH, BEGINNING OF YEAR</b>	<b>6,394</b>	<b>18,819</b>
<b>CASH, CASH EQUIVALENTS AND RESTRICTED CASH, END OF YEAR</b>	<b>\$ 240,232</b>	<b>\$ 6,394</b>

*See accompanying notes to consolidated financial statements*

**ESS Tech, Inc.**  
**Statements of Cash Flows (continued)**  
**For the Years Ended December 31, 2021 and 2020**  
**(in thousands)**

	2021	2020
<b>SUPPLEMENTAL DISCLOSURE OF CASH FLOW INFORMATION:</b>		
Cash paid during the year for:		
Interest	\$ 1,799	\$ 111
Non-cash investing and financing transactions:		
Property and equipment purchases financed with term loan	\$ —	\$ 52
Purchase of property and equipment included in accounts payable and accrued and other current liabilities	\$ 526	\$ 55
Extinguishment of derivative liabilities upon sale of Legacy ESS Series C-2 redeemable convertible preferred stock, net of amount allocated to warrants	\$ 18,055	\$ —
Extinguishment of warrant liabilities upon exercise of Legacy ESS Series B, Series C-1 and Series C-2 redeemable convertible preferred stock warrants	\$ 26,178	\$ —
Assumption of accrued expenses upon Business Combination	\$ 75	\$ —
Assumption of private and public warrant liabilities upon Business Combination	\$ 11,833	\$ —
Assumption of earnout warrant liabilities upon Business Combination	\$ 502	\$ —
Assumption of earnout liability upon Business Combination	\$ 109,507	\$ —
Extinguishment of earnout liability upon achievement of earnout and issuance of shares	\$ 263,338	\$ —
Extinguishment of derivative liability upon exercise of Legacy ESS Series C-2 purchase right and related Series C-2 warrant liability upon Business Combination	\$ 222,924	\$ —
Extinguishment of public warrant liability upon exercise of warrants	\$ 4,143	\$ —
Cash and cash equivalents	\$ 238,940	\$ 4,901
Restricted cash, current	1,217	1,167
Restricted cash, non-current	75	326
Total cash, cash equivalents and restricted cash shown in the statements of cash flows	<u>\$ 240,232</u>	<u>\$ 6,394</u>

*See accompanying notes to consolidated financial statements*

**ESS TECH, INC.**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS**

**AS OF AND FOR THE YEARS ENDED DECEMBER 31, 2021 AND 2020**

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**1. DESCRIPTION OF BUSINESS, BASIS OF PRESENTATION AND RISKS AND UNCERTAINTIES**

**Description of Business**—On October 8, 2021 (the “Closing Date”), ACON S2 Acquisition Corp. (“STWO”), a publicly traded special purpose acquisition company, consummated a merger pursuant to the Agreement and Plan of Merger, dated May 6, 2021 (the “Merger Agreement”), by and among STWO, SCharge Merger Sub, Inc., a Delaware corporation and wholly owned direct subsidiary of STWO (“Merger Sub”), and ESS Tech, Inc., a Delaware corporation (“Legacy ESS”) following the approval at a special meeting of the stockholders of STWO held on October 5, 2021.

Pursuant to the terms of the Merger Agreement, STWO deregistered by way of continuation under the Cayman Islands Companies Act (2021 Revision) and registered as a corporation in the State of Delaware under Part XII of the Delaware General Corporation Law (the “Domestication”), and a business combination between STWO and Legacy ESS was effected through the merger of Merger Sub with and into Legacy ESS, with Legacy ESS surviving as a wholly owned subsidiary of STWO (together with the other transactions described in the Merger Agreement, the “Business Combination”). On the Closing Date, STWO changed its name from “ACON S2 Acquisition Corp” to “ESS Tech, Inc.” (the “Company” or “ESS”), and its common shares of stock and warrants for shares of ESS common stock commenced trading on the New York Stock Exchange under the new ticker symbols “GWH” and “GWH.W”, respectively.

ESS is a long-duration energy storage company specializing in iron flow battery technology. ESS develops long-duration iron flow batteries for commercial and utility-scale energy storage applications requiring four or more hours of flexible energy capacity. The Company’s products are designed for a 25-year operating life without performance degradation, and with minimal annual operations and maintenance requirements. The Company is in the research and development phase. Its products are still being developed and do not yet meet standard specifications to be sold (“Commercially Available”).

**Basis of Presentation**—The accompanying consolidated financial statements include the accounts of the Company and its wholly owned subsidiary and have been prepared in accordance with accounting principles generally accepted in the United States of America (“U.S. GAAP”).

Pursuant to the Merger Agreement, the merger between Merger Sub and Legacy ESS was accounted for as a reverse recapitalization in accordance with U.S. GAAP (the “Reverse Recapitalization”). Under this method of accounting, STWO was treated as the “acquired” company and Legacy ESS was treated as the acquirer for financial reporting purposes. Accordingly, for accounting purposes, the Reverse Recapitalization was treated as the equivalent of Legacy ESS issuing stock for the net assets of STWO, accompanied by a recapitalization. The net assets of STWO were stated at historical cost, with no goodwill or other intangible assets recorded. Legacy ESS was determined to be the accounting acquirer based on the following predominant factors:

- Legacy ESS’s existing stockholders had the greatest voting interest in the Company;
- Legacy ESS’s directors represented all of the new board of directors of the Company;
- Legacy ESS’s senior management continued as the senior management of the Company; and,
- Legacy ESS had the larger employee base.

The assets, liabilities and results of operations prior to the Reverse Recapitalization are those of Legacy ESS. The shares and corresponding capital amounts and losses per share, prior to the Reverse Recapitalization, have been retroactively restated based on shares reflecting the exchange ratio of approximately 1.47 (the “Per Share Consideration”) established in the Business Combination.

**Risks and Uncertainties**—The Company is subject to a number of risks associated with companies of similar size in its industry, including, but not limited to, the need for successful development of products, the need for additional capital and financing to fund operations, competition from substitute products and services from larger companies, legal protection of proprietary technology, patent litigation, dependence on key individuals, and risks associated with changes in information technology.

COVID-19 presents material uncertainty and risk with respect to the Company, its performance, and its financial results and could adversely affect the Company’s financial position and results.

**Segment Information**—The Company has determined that its Chief Executive Officer (“CEO”) is its chief operating decision maker (“CODM”). The CEO reviews financial information for purposes of assessing performance and making decisions on how to allocate resources. The Company has determined that it operates in a single reportable segment.

Substantially all of the Company’s operations and long-lived assets were attributable to operations in the United States as of December 31, 2021 and 2020.

**Use of Estimates**—The preparation of the consolidated financial statements in conformity with U.S. GAAP requires management to make estimates, judgments and assumptions that affect the reported amounts of assets and liabilities and disclosure of commitments and contingencies as of the date of the financial statements and the reported amounts of expenses during the reporting periods. Such estimates relate to, among others, the useful lives and assessment of recoverability of property and equipment, deferred tax assets valuation, determination of the fair value of the Company’s Bridge Loan, warrant liabilities, Series C-2 Convertible Preferred Stock Issuance Right, earnout liabilities, earnout warrant liabilities, public warrants, private warrants, as well as other accruals. These estimates are based on historical trends, market pricing, current events and other relevant assumptions and data points. Actual results could differ from those estimates and such differences may be material to the financial statements.

**Concentration of Credit Risk**—Financial instruments that potentially subject the Company to concentration of credit risk consist of cash and cash equivalents and restricted cash. The Company’s cash and cash equivalents include cash in bank accounts and money market accounts. The Company’s restricted cash includes a certificate of deposit and performance and payment bond. Deposits held with banks may exceed the amount of insurance provided on such deposits.

## 2. SIGNIFICANT ACCOUNTING POLICIES

**Net Loss Per Share**— The Company follows the two-class method when computing net income (loss) per common share when shares are issued that meet the definition of participating securities. Under this method, net earnings are reduced by the amount of dividends declared in the current period for common shareholders and participating security holders. The remaining earnings or “undistributed earnings” are allocated between common stock and participating securities to the extent that each security may share in earnings as if all the earnings for the period had been distributed. Once calculated, the earnings per common share is computed by dividing the net income (loss) attributable to common shareholders by the weighted average number of common shares outstanding during each year presented. Diluted income (loss) attributable to common shareholders per common share has been computed by dividing the net income (loss) attributable to common shareholders by the weighted average number of common shares outstanding plus the dilutive effect of outstanding options, warrants, restricted stock units (“RSU”), and earnout shares pending satisfaction of a regulatory holding period during the respective periods computed using the treasury method. In cases where the Company has a net loss, no dilutive effect is shown as options, warrants, RSU, and earnout shares pending satisfaction of a regulatory holding period become anti-dilutive.

**Cash and Cash Equivalents**—The Company considers all highly liquid investments with an original maturity of three months or less when purchased to be cash equivalents. Cash equivalents are recorded at carrying value, which approximates fair value. Cash and cash equivalents include cash in bank accounts and money market funds.

**Restricted Cash**—Restricted cash is required as collateral for certain of the Company’s lease agreements and contractual supply and service arrangements. Restricted cash includes a certificate of deposit for the Company’s lease agreements and a performance and payment bond for the Company’s supply and service arrangements. The certificate of deposit and bond are recorded at carrying value, which approximates fair value. Restricted cash amounts are reported in the balance sheets as current or non-current depending on when the cash will be contractually released.

**Property and Equipment**—Property and equipment are stated at cost, net of depreciation. Depreciation is provided using the straight-line method over the estimated useful lives of the assets, which range from three to seven years. Leasehold improvements are amortized over the lesser of the estimated useful lives of the assets or the remaining lease term. Expenditures for maintenance and repairs are expensed in the Statements of Operations as incurred. Expenditures which materially increase values, change capacities, or extend useful lives are capitalized. When assets are retired or disposed of, the cost and accumulated depreciation are removed from the accounts, and any resulting gains or losses are recognized in other expense, net.

The Company evaluates the recoverability of property and equipment for possible impairment whenever events or circumstances indicate that the carrying amount of such assets may not be recoverable. The Company assesses the alternative use of an asset, the condition of the asset and the current market demand to determine if an asset is impaired. No impairment loss was recognized during the years ended December 31, 2021 and 2020.

**Revenue Recognition**—The Company did not recognize any revenue in fiscal years 2021 and 2020. The Company will recognize revenue in compliance with the requirements of, and the guidance provided by Accounting Standards Codification (“ASC”) 606 - *Revenue from Contracts with Customers (Topic 606)*.

**Sales and Marketing**—Sales and marketing costs consist of compensation costs and employee benefits of marketing and sales personnel and related support teams, stock-based compensation, depreciation as well as travel, trade show sponsorships and events, conferences, and internet advertising costs. Advertising costs are expensed as incurred. The Company incurred advertising costs of \$45 thousand and \$8 thousand for the years ended December 31, 2021 and 2020, respectively.

**Research and Development**—The Company is in the research and development phase. The Company's product offering relies heavily on new technology currently undergoing development and does not yet meet standard specifications to be sold commercially. Research and development costs are expensed as incurred and consist primarily of product development material costs, consumables, maintenance spare parts, raw materials, components, scrap, freight costs, compensation costs and employee benefits, stock-based compensation, depreciation charges, consulting services, and other direct expenses, net of government grants.

The Company receives funding from federal agencies for research and development activities related to its products. Under certain circumstances, up to the entire amount of funding may need to be repaid to the grantor in the form of a success fee in future periods if the Company monetizes the results of the activities funded by the grantor.

The portion of such funding that the Company may be required to repay in certain circumstances is recorded in accrued and other liabilities and was \$452 thousand and \$186 thousand as of December 31, 2021 and 2020, respectively.

**General and Administrative**—General and administrative costs include executive and administrative compensation costs and employee benefits, stock-based compensation, depreciation charges, professional services fees, insurance costs, bad debt, other allocated costs, such as facility-related expenses, supplies, and other fixed costs.

**Stock-Based Compensation**—The Company accounts for stock-based compensation in accordance with ASC 718, *Compensation – Stock Compensation (“ASC 718”)*.

The Company measures compensation expense for all stock-based awards for stock options granted to employees and non-employees based on the estimated fair values on the date of the grant. The fair value of each stock option granted is estimated using the Black-Scholes Merton option-pricing model using the single-option award approach. The following assumptions are used in the Black-Scholes Merton option-pricing model:

**Risk-Free Interest Rate**—The risk-free interest rate is based on the implied yield available on the date of grant on U.S. Treasury zero-coupon issued with a term that is equal to the option's expected term at the grant date.

**Expected Volatility**—The Company estimates the volatility for option grants by evaluating the average historical volatility of a peer group of companies for the period immediately preceding the option grant for a term that is approximately equal to the option's expected term.

**Expected Term**—The expected term for employees represents the period over which options granted are expected to be outstanding using the simplified method, as the Company's historical share option exercise experience does not provide a reasonable basis upon which to estimate the expected term. The simplified method deems the term to be the average of the time-to-vesting and contractual life of the stock-based awards.

**Dividend Yield**—The Company has not declared or paid dividends to date and does not anticipate declaring dividends. A such, the dividend yield has been estimated to be zero.

In accordance with ASU 2016-09, *Improvements to Employee Share-Based Payment Accounting*, the Company may account for forfeitures as they occur or use estimated forfeitures. The Company elected to use actual forfeitures. The share-based compensation expense is recognized using a straight-line basis over the requisite service periods of the awards. The requisite service period is generally the vesting period of such options, and the stock-based compensation expense is presented as a component of operating expenses within the statements of operations.

The Company recognizes all excess tax benefits and deficiencies for share-based awards as an income tax expense or benefit in the statements of operations. Excess tax benefits are classified with other income tax in the Consolidated Statement of Cash Flows as an operating activity.

**Income Taxes**—The Company accounts for income taxes under the asset and liability method. Under this method, deferred taxes are determined based on the temporary differences between the financial statement and tax bases of assets and liabilities using tax rates expected to be in effect during the years in which the bases differences are

expected to reverse. The effect of a change in tax rates on deferred tax assets and liabilities is recognized in the Consolidated Statement of Operations in the period that includes the enactment date. The Company provides for a valuation allowance when it is more likely than not that some portion of, or all of the Company's deferred tax assets will not be realized. In making such determination, the Company considers all available positive and negative evidence, including future reversals of existing taxable temporary differences, projected future taxable income, tax-planning strategies, and results of recent operations. As of December 31, 2021 and 2020, the Company has recorded a full valuation allowance against its deferred tax assets.

ASC 740, *Accounting for Income Taxes*, requires that the tax benefit of net operating losses, temporary differences and credit carryforwards be recorded as an asset to the extent that management assesses that realization is "more likely than not." Realization of the future tax benefits is dependent on the Company's ability to generate sufficient taxable income within the carryforward period. Because of the Company's history of operating losses, management believes that recognition of the deferred tax assets arising from the above-mentioned future tax benefits is currently not likely and, accordingly, has provided a full valuation allowance for these tax benefits for fiscal years 2021 and 2020.

The Company recognizes accrued interest and penalties related to unrecognized tax benefits as income tax expense. No amounts were accrued for the payment of interest and penalties as of December 31, 2021 and 2020 as the Company is currently not aware of any issues under review that could result in significant payments, accruals, or material deviation from its position.

**Fair Value**—The Company follows ASC 820, *Fair Value Measurements ("ASC 820")*, which establishes a common definition of fair value to be applied when U.S. GAAP requires the use of fair value, establishes a framework for measuring fair value, and requires certain disclosure about such fair value measurements.

ASC 820 establishes a hierarchy for inputs used in measuring fair value that maximizes the use of observable inputs and minimizes the use of unobservable inputs by requiring that observable inputs be used when available. Observable inputs are inputs that market participants would use in pricing the asset or liability based on market data obtained from sources independent of the Company. Unobservable inputs are inputs that reflect the Company's assumptions about what market participants would use in pricing the asset or liability based on the best information available in the circumstances. The hierarchy is broken down into three levels based on the reliability of inputs as follows:

*Level 1:* Observable inputs such as quoted prices in active markets for identical assets or liabilities to which the Company has access at a measurement date.

*Level 2:* Observable inputs other than Level 1 quoted prices that are observable for the asset or liability, either directly or indirectly; these include quoted prices for similar assets or liabilities in an active market, quoted prices for identical assets and liabilities in markets that are not active, or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities.

*Level 3:* Unobservable inputs for which little or no market data exists and for which the Company must develop its own assumptions regarding the assumptions that market participants would use in pricing the asset or liability, including assumptions regarding risk.

Because of the uncertainties inherent in the valuation of assets or liabilities for which there are no observable inputs, those estimated fair values may differ significantly from the values that may have been used had a ready market for the assets or liabilities existed.

#### **Recent Accounting Pronouncements**

Pursuant to the Jumpstart Our Business Startups Act ("JOBS Act"), an emerging growth company is provided the option to adopt new or revised accounting standards that may be issued by the FASB or the SEC either (i) within the same periods as those otherwise applicable to non-emerging growth companies or (ii) within the same time periods as private companies. The Company has elected to use the extended transition period for complying with any new or revised financial accounting standards. As a result, the Company's financial statements may not be comparable to the financial statements of issuers who are required to comply with the effective date for new or revised accounting standards that are applicable to public companies. The Company also intends to continue to take advantage of some of the reduced regulatory and reporting requirements of emerging growth companies pursuant to the JOBS Act so long as the Company qualifies as an emerging growth company.

In February 2016, the FASB issued No. ASU 2016-02, *Leases (ASC 842)* which superseded previous guidance related to accounting for leases. This new guidance requires lessees to recognize most leases on their balance sheets as right-of-use ("ROU") assets with corresponding lease liabilities and eliminates certain real estate-specific provisions. Accounting for lessors is substantially unchanged from current accounting principles. Lessees will be required to

classify leases as either finance leases or operation leases. Initial balance sheet measurement is similar for both types of leases; however, expense recognition and amortization of right-of-use assets will differ.

The new standard provides optional practical expedients in transition including a package of practical expedients that will allow the Company to carry forward its historical classification of existing leases. In addition, the new standard also provides practical expedients for an entity's ongoing accounting. The Company elected the short-term lease recognition exemption for all leases that qualify, which means leases with initial terms of 12 months or less will not be recorded on the balance sheet. The new standard is effective for fiscal years beginning after December 15, 2021.

The Company adopted ASC 842 effective January 1, 2022. The most significant effect of the adoption resulted in the recognition of an ROU asset and liability of approximately \$5,000 thousand. The adoption of this standard did not have a material impact on the Company's results of operations, cash flows or liquidity measures.

In June 2016, the FASB issued ASU No. 2016-13, *Financial Instruments—Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments* ("ASU 2016-13"), which requires the measurement and recognition of expected credit losses for financial assets held at amortized cost. ASU 2016-13 replaces the existing incurred loss impairment model with a forward-looking expected credit loss model, which will result in earlier recognition of credit losses. ASU 2016-13 is effective for emerging-growth companies for fiscal years beginning after December 15, 2022, and interim periods within those fiscal years. The Company is currently evaluating the impact that the standard will have on its financial statements and related disclosures.

In December 2019, the FASB issued ASU No. 2019-12, *Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes* ("ASU 2019-12"), which simplifies the accounting for income taxes. ASU 2019-12 is effective for emerging-growth companies for fiscal years beginning after December 15, 2021, and interim periods within fiscal years beginning after December 15, 2022. The Company is currently evaluating the impact that the standard will have on its financial statements and related disclosures.

In August 2020, the FASB issued ASU 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"). ASU 2020-06 reduces the number of accounting models for convertible debt instruments and redeemable convertible preferred stock. For convertible instruments with conversion features that are not required to be accounted for as derivatives under Topic 815, *Derivatives and Hedging*, or that do not result in substantial premiums accounted for as paid-in capital, the embedded conversion features no longer are separated from the host contract. ASU 2020-06 also removes certain conditions that should be considered in the derivatives scope exception evaluation under Subtopic 815-40, *Derivatives and Hedging—Contracts in Entity's Own Equity*, and clarify the scope and certain requirements under Subtopic 815-40. In addition, ASU 2020-06 improves the guidance related to the disclosures and earnings-per-share (EPS) for convertible instruments and contracts in an entity's own equity. ASU 2020-06 is effective for public companies for fiscal years beginning after December 15, 2021, including interim periods within those fiscal years. For all other companies, the amendments are effective for fiscal years beginning after December 15, 2023, including interim periods within those fiscal years. Early adoption is permitted, but no earlier than fiscal years beginning after December 15, 2020, including interim periods within those fiscal years. As of December 31, 2021, the Company did not hold any instruments within the scope of ASU 2020-06.

### 3. BUSINESS COMBINATION

As discussed in Note 1, on October 8, 2021, the Company consummated the Business Combination pursuant to the Merger Agreement, with Legacy ESS surviving the Business Combination as a wholly owned subsidiary of the Company. Upon the Business Combination closing, each share of Legacy ESS's common stock, par value \$0.0001 per share ("Legacy ESS Common Stock") and Preferred Stock, par value \$0.0001 per share ("Legacy ESS Preferred Stock"), were converted into the right to receive shares of the Company's common stock at the Per Share Consideration as calculated pursuant to the Merger Agreement. The aggregate consideration paid to Legacy ESS stockholders in connection with the Business Combination (excluding any potential Earnout Shares (see below for definition)), was 99,700,326 shares of the Company's common stock (including 125,958 shares of common stock issued following the Closing as a result of a transaction expense adjustment as disclosed in the Company's Form 8-K filed with the SEC on November 15, 2021).

Upon the closing of the Business Combination, the Company's certificate of incorporation was amended and restated to, among other things, increase the total number of authorized shares of capital stock to 2,200,000,000, of which 2,000,000,000 shares are Common Stock, \$0.0001 par value per share, and 200,000,000 shares are Preferred Stock, \$0.0001 value per share.

In connection with the Business Combination, on the Closing Date, STWO issued and sold an aggregate of 25,000,000 shares of the Company's common stock for a selling price of \$10.00 per share and an aggregate selling price of \$250,000 thousand pursuant to subscription agreements, dated as of May 6, 2021, with certain accredited investors, in a Private Investment in Public Equity ("PIPE Financing").

Each issued and outstanding warrant of Legacy ESS was exercised in full in exchange for the issuance of shares of the Company's common stock immediately prior to the Closing.

Each issued and outstanding vested and unvested Legacy ESS option was converted into options of the Company exercisable for shares of the Company's common stock with the same terms except for the number of shares exercisable and the exercise price, each of which was adjusted using the Per Share Consideration.

Legacy ESS allocated to Legacy ESS employees 824,998 RSUs (the "Incentive RSU Pool") of which 757,448 were vested upon meeting certain Earnout Milestone Events on November 9, 2021. A total of 67,550 RSUs were cancelled or not awarded as the holders did not meet the continued service requirement through the vesting date.

Pursuant to the Merger Agreement, the Company was permitted to issue to eligible Legacy ESS securityholders, on a pro rata basis, up to 16,500,000 shares of additional common stock (the "Earnout Shares") less any RSUs issued pursuant to the Incentive RSU Pool, issuable in two equal tranches upon the occurrence of the respective Earnout Milestone Events. The Earnout Milestone Events were achieved on November 9, 2021 and Legacy ESS issued 15,674,965 shares to securityholders. 6,707,318 of the Earnout Shares were delivered subsequent to December 31, 2021 upon satisfaction of a regulatory holding period and were excluded from the calculation of diluted weighted-average common shares outstanding for the period, see Note 5.

The Business Combination is accounted for as a reverse recapitalization in accordance with U.S. GAAP. Under this method of accounting, STWO was treated as the "acquired" company and Legacy ESS was treated as the acquirer for financial reporting purposes. Accordingly, for accounting purposes, the Business Combination was treated as the equivalent of Legacy ESS issuing stock for the net assets of STWO, accompanied by a recapitalization. The net assets of STWO were stated at historical cost, with no goodwill or other intangible assets recorded.

The following table reconciles the elements of the Business Combination to the Consolidated Statement of Cash Flows and the Consolidated Statement of Stockholders' Equity for the year ended December 31, 2021 (in thousands):

Cash contributions from Business Combination and PIPE Financing, net of redemptions	\$ 258,730
Less: transaction costs paid by ESS	(7,895)
Net cash contributions from Business Combination and PIPE Financing	250,835
Less: non-cash fair value of Public and Private Common Stock Warrants	(11,833)
Less: non-cash fair value of Earnout Shares and Warrants	(110,010)
Less: liabilities assumed from STWO	(75)
Net Business Combination and PIPE Financing	\$ 128,917

The number of shares of common stock issued immediately following the consummation of the Business Combination:

Class A Common Stock, outstanding prior to Business Combination	25,000,000
Class B Common Stock outstanding prior to Business Combination	6,250,000
Less: redemption of STWO shares	(20,754,719)
Common Stock of STWO	10,495,281
ESS Common Stock issued upon exercise of C-2 Right and Warrant	29,153,806
Shares issued in PIPE Financing	25,000,000
Business Combination and PIPE Financing shares - Common Stock	64,649,087
Legacy ESS Convertible Preferred Stock converted to ESS Common Stock	57,104,322
Legacy ESS Common Stock converted to ESS Common Stock	13,442,198
Total shares of Common Stock immediately after Business Combination	135,195,607

#### 4. DEFERRED REVENUE

As of December 31, 2021, the Company has entered into contracts with customers for which sales have not been recognized as the Company has not yet met revenue recognition criteria. As per customer arrangements, the Company

invoices customers in advance of recognizing the sale of units and records advance deposits as deferred revenue, as reported in current liabilities.

The following table summarizes the balances of the Company's deferred revenue as of December 31, 2021 and 2020 for contracts that are expected to be completed and revenue recognized in the subsequent twelve month period (in thousands):

	2021	2020
Deferred revenue - units shipped in August 2021	\$ 383	\$ —
Deferred revenue - units shipped in September 2021	171	—
Other deferred revenue	3,109	—
<b>Total deferred revenue</b>	<b>\$ 3,663</b>	<b>\$ —</b>

As of December 31, 2020, the Company had recorded customer deposits of \$2,258 thousand which were classified as other non-current liabilities. The balance has been reclassified to current liabilities as of December 31, 2021 based on expected contract fulfillment in 2022.

## 5. LOSS PER SHARE

The following table presents the calculation of basic and diluted net loss per share attributable to common shareholders for the years ended December 31, 2021 and 2020 (in thousands, except per share data):

	2021	2020
Net Loss attributable to common stockholders	\$ (477,117)	\$ (30,419)
Weighted-average shares outstanding – Basic and Diluted	83,256,431	58,880,742
Net loss per share – Basic and Diluted	\$ (5.73)	\$ (0.52)

Due to the net losses for the years ended December 31, 2021 and 2020, basic and diluted net loss per common share were the same, as the effect of potentially dilutive securities would have been anti-dilutive.

The following outstanding balances of common share equivalent securities have been excluded from the calculation of diluted weighted-average common shares outstanding because the effect is anti-dilutive for the periods presented:

	2021	2020
Stock options	3,796,530	5,732,422
Restricted stock units	3,392,153	—
Warrants	11,461,247	450,153
Earnout shares pending satisfaction of regulatory holding period	6,707,318	—
	<u>25,357,248</u>	<u>6,182,575</u>

## 6. PREPAID EXPENSES AND OTHER CURRENT ASSETS

Prepaid expenses and other current assets consist of the following as of December 31, 2021 and 2020 (in thousands):

	2021	2020
Insurance	\$ 3,482	\$ 107
Vendor advances	1,103	473
Accounts receivable	517	—
Other	259	213
<b>Total prepaid expenses and other current assets</b>	<b>\$ 5,361</b>	<b>\$ 793</b>

## 7. PROPERTY AND EQUIPMENT, NET

Property and equipment, net consist of the following as of December 31, 2021 and 2020 (in thousands):

	2021	2020
Machinery and equipment	\$ 2,868	\$ 2,217
Furniture and fixtures	90	90
Leasehold improvements	746	677
Construction in process	2,517	—
Total property and equipment	6,221	2,984
Less accumulated depreciation	(1,720)	(1,148)
Total property and equipment, net	<u>\$ 4,501</u>	<u>\$ 1,836</u>

Depreciation expense was \$572 thousand and \$436 thousand for the years ended December 31, 2021 and 2020, respectively.

#### 8. ACCRUED AND OTHER CURRENT LIABILITIES

Accrued and other current liabilities consist of the following as of December 31, 2021 and 2020 (in thousands):

	2021	2020
Payroll and related benefits	\$ 1,876	\$ 777
Materials and related purchases	2,108	464
Deferred rent	142	462
Professional and consulting fees	1,820	248
Other	541	243
Total accrued and other current liabilities	<u>\$ 6,487</u>	<u>\$ 2,194</u>

#### 9. LEASES

The Company leases office and manufacturing space in Wilsonville, Oregon under operating leases that expire in 2025.

Future minimum lease payments under non-cancelable operating lease agreements for the years ending December 31, are as follows (in thousands):

2022	\$ 1,625
2023	1,670
2024	1,720
2025	983
Total	<u>\$ 5,998</u>

Rent expense related to operating leases aggregated \$1,491 thousand and \$837 thousand in 2021 and 2020, respectively.

Each of these leases provides the Company an option to renew the lease for an additional 60 months, exercisable upon notice to renew ranging from 60 days to 12 months prior to the end of the initial lease term. As of the date of issuance of these financial statements, the Company has not provided such notice.

**10. BORROWINGS**

Long term debt consists of the following as of December 31, 2021 and 2020 (in thousands):

	2021	2020
Notes payable	\$ 3,769	\$ 4,761
PPP loan	—	936
Total notes payable	3,769	5,697
Less current portion of notes payable	1,900	5,678
Long-term notes payable, net of current portion	<u>\$ 1,869</u>	<u>\$ 19</u>

***Payroll Protection Program Loan***

On April 19, 2020, the Company entered into an unsecured promissory note under the Payroll Protection Program (“the PPP Loan”), with a bank under the PPP administered by the United States Small Business Administration (“SBA”) and authorized by the Keeping American Workers Employed and Paid Act, which is part of the CARES Act, enacted on March 27, 2020. The principal amount of the PPP Loan was \$936 thousand. The PPP Loan bore interest of 1.0% per annum and was disbursed to the Company on April 20, 2020. In July 2021, the Company applied for and received forgiveness on the \$936 thousand PPP Loan plus \$12 thousand in accrued interest. The gain on extinguishment of debt of \$948 thousand is recorded within other income (expense), net in the Company’s Consolidated Statements of Operations and Comprehensive Loss for year ended December 31, 2021.

***Bridge Loan***

In July 2021, the Company entered into a six-month \$20,000 thousand bridge loan (the “Bridge Loan”), maturing on the earlier of January 12, 2022 or consummation of the Business Combination, which ultimately closed on October 8, 2021, see Note 3. The Bridge Loan bore interest of 9%, of which 2.25% was payable monthly and 6.75% paid-in-kind (“PIK”) interest was due upon maturity. At maturity, a final payment of \$1,250 thousand was due in addition to all outstanding principal and accrued interest. The Bridge Loan was paid off pursuant to the terms of the Business Combination.

The Company elected the fair value option to account for the Bridge Loan, which contained embedded derivatives. The Company recorded the Bridge Loan at fair value of \$20,000 thousand at issuance. Interest expense of \$1,578 thousand was recognized related to the paid in-kind interest and final payment on the Bridge Loan for the year ended December 31, 2021.

***Notes Payable***

In 2018, the Company entered into a \$1,000 thousand note payable with a bank that was secured by all property of the Company, except for its intellectual property. The note payable’s original maturity date was July 1, 2021.

In March 2020, the Company amended the note payable and borrowed an additional \$4,000 thousand. The additional \$4,000 thousand borrowing changed the present value of cash flows by more than 10% and, as such, was treated as a debt extinguishment. The Company recognized a \$62 thousand loss on extinguishment of debt for the year ended December 31, 2020. The Company’s notes payable to the bank were recorded at fair value as part of the extinguishment. The \$4,000 thousand note payable’s original maturity date was January 1, 2023.

In April 2020, the Company entered into a Deferral Agreement (“Deferral Agreement”) to extend the maturity date of the original \$1,000 thousand note payable to January 1, 2023 and extend the maturity date of the additional \$4,000 thousand note payable to January 1, 2024. The Company accounted for the Deferral Agreement as a debt modification based on an analysis of cash flows before and after the debt modification.

The notes payable bear interest at 0.50% below the bank’s prime rate (2.75% on December 31, 2021). The Company makes monthly interest and principal payments on the note payable based on the schedule defined in the agreement.

In conjunction with the notes payable, Legacy ESS issued warrants to purchase 100,161 shares of Series B redeemable convertible preferred stock and 103,107 shares of Series C redeemable convertible preferred stock in July 2018 and March 2020, respectively. The Series B redeemable convertible preferred stock warrants and Series C redeemable convertible preferred stock warrants have exercise prices of \$0.96 and \$1.25 per share, respectively and expire 10 years after issuance. The fair value of Series B redeemable convertible preferred stock warrants and Series C redeemable convertible preferred stock warrants were \$55 thousand and \$44 thousand, respectively, at the time of issuance. The fair value of the Series B redeemable convertible preferred stock warrants was initially recorded as a reduction of the value of the notes payable and were amortized over the term of the loan as interest expense using the effective interest rate method. Unamortized Series B redeemable convertible preferred stock warrants were treated as a component of loss on extinguishment of debt. The Series C redeemable convertible preferred stock warrants were issued in conjunction with the additional \$4,000 thousand borrowing and were a component of the loss on extinguishment of debt. All outstanding shares of Legacy ESS's redeemable convertible preferred stock were converted to shares of common stock immediately prior to the completion of the Business Combination. See Note 12. Interest expense of \$0 and \$4 thousand were recognized related to the amortization of warrants issued in conjunction with the notes payable for the years ended December 31, 2021 and December 31, 2020, respectively.

The audit opinion as of and for the year ended December 31, 2020 financial statements contained a going concern explanatory paragraph. Under the notes payable loan agreement, a going concern opinion with respect to the Company's audited financial statements is a material adverse change resulting in an event of default. In accordance with a subjective acceleration clause, the Lender had an option to elect to accelerate \$4,583 thousand of the Company's existing indebtedness as of December 31, 2020 to be immediately due and payable. As of December 31, 2020, the event of default would have also accelerated the \$943 thousand in principal and interest due on the PPP Loan because of the cross-default provisions. The Company had classified the notes payable and PPP loan as current liabilities as of December 31, 2020 due to the considerations discussed above and the assessment that the material adverse change clause under the notes payable and PPP Loan agreements was not within the Company's control. As of December 31, 2021, the Company has concluded that the Business Combination alleviated the risk related to going concern, as well as that related to the subjective acceleration clause.

Annual maturities on notes payable outstanding at December 31, 2021 are as follows (in thousands):

2022	\$	1,900
2023		1,600
2024		333
Total maturities		3,833
Less: unamortized debt premium		(64)
Total notes payable	\$	3,769

## 11. COMMITMENTS AND CONTINGENCIES

The Company, from time to time, is a party to various claims, legal actions, and complaints arising in the ordinary course of business. The Company is not aware of any legal proceedings or other claims, legal actions, or complaints through the date of issuance of these financial statements.

As of December 31, 2021, and 2020, the Company had a standby letter of credit with First Republic Bank totaling \$725 thousand as security for an operating lease of office and manufacturing space in Wilsonville, Oregon. As of December 31, 2021 the letter of credit was secured by a restricted certificate of deposit account totaling \$125 thousand. There were no draws against the letter of credit during the years ended December 31, 2021 and 2020.

The Company purchases materials from several suppliers and has entered into agreements with various contract manufacturers, which include cancelable and noncancelable purchase commitments.

As of December 31, 2021 and 2020, total unfulfilled noncancelable purchase commitments were \$10,160 thousand and \$3,410 thousand, respectively. In addition, total unfulfilled cancellable purchase commitments amounted to \$10,446 thousand and \$787 thousand as of December 31, 2021, and 2020, respectively. These purchase commitments were not recorded in the financial statements.

## 12. LEGACY ESS REDEEMABLE CONVERTIBLE PREFERRED STOCK

All Legacy ESS redeemable convertible preferred stock classified as redeemable was converted into Legacy ESS common stock, which was subsequently exchanged for the Company's common stock as a result of the Business Combination using the Per Share Consideration of approximately 1.47. All preferred stock amounts have been retroactively adjusted to reflect the Business Combination.

Immediately prior to the completion of the Business Combination on October 8, 2021, all outstanding shares of Legacy ESS's redeemable convertible preferred stock converted into an aggregate 57,104,332 shares of common stock.

### *Legacy ESS Rights to Purchase Series C-2 Convertible Preferred Stock*

Legacy ESS's Series C redeemable convertible preferred stock financing agreement initially provided additional committed funding of up to \$79,999 thousand, through the purchase of up to 39,971,716 shares of Series C-2 redeemable convertible preferred stock based on the completion of certain operational milestones at a predetermined price of \$2.00 per share, to certain Series C-1 Investors.

Legacy ESS determined that its obligation to issue, and Legacy ESS's investors' obligation to purchase shares of Series C-2 redeemable convertible preferred stock at a fixed price represents a freestanding derivative financial instrument (the "Series C-2 Redeemable Convertible Preferred Stock Issuance Right"). The Series C-2 Redeemable Convertible Preferred Stock Issuance Right was initially recorded at fair value and was adjusted to fair value at each reporting date, with the change in fair value recorded as a revaluation of derivative liabilities as a component of other income and expense in the Consolidated Statement of Operations. The Series C-2 Redeemable Convertible Preferred Stock Issuance Right was initially scheduled to expire in August 2021 and was classified as a noncurrent derivative liability as of December 31, 2020.

The Series C-2 Redeemable Convertible Preferred Stock Issuance Right was initially valued at a fair value of \$11,379 thousand.

### *Sale of Legacy ESS Series C-2 Redeemable Convertible Preferred Stock*

In March 2021, Legacy ESS issued 5,746,003 shares of Series C-2 redeemable convertible preferred stock for \$2.00 per share, totaling \$11,500 thousand. Legacy ESS incurred \$39 thousand in costs associated with the issuance. In connection with the sale of the Series C-2 redeemable convertible preferred stock, Legacy ESS issued warrants to purchase 861,896 shares of Series C-2 redeemable convertible preferred stock and extinguished a portion of the C-2 Purchase Right for 5,746,003 shares. The warrants were exercisable at a price of \$0.0001 per share. The extinguishment of a portion of the Series C-2 Redeemable Convertible Preferred Stock Issuance Right reduced Legacy ESS's derivative liabilities and increased the amount attributable to the issuance by \$23,152 thousand. Total transaction value of \$34,613 thousand was allocated to the Series C-2 redeemable convertible preferred stock and warrants in the amounts of \$29,516 thousand and \$5,096 thousand, respectively.

### *Amendment to Legacy ESS Series C-2 Redeemable Convertible Preferred Stock Purchase Right and Related Warrants*

On May 7, 2021, Legacy ESS amended its Series C-2 Preferred Stock Purchase Agreement and Amendment to Series C Preferred Stock Purchase Agreement. Under the terms of the amended agreement, the number of shares of C-2

Convertible Redeemable Preferred Stock required to be issued by Legacy ESS and purchased by investors under the C-2 Redeemable Convertible Preferred Stock Purchase Right were adjusted, and Legacy ESS issued Series C-2 warrants. The Series C-2 warrants were exercisable at a price of \$0.00007 per share upon a successful Business Combination with STWO. The investors were permitted to purchase shares subject to the C-2 Redeemable Convertible Preferred Stock Purchase Right at any time and must purchase the shares upon the Company's achievement of specific milestones. The number of shares subject to and potential proceeds from the C-2 Redeemable Convertible Preferred Stock Purchase Agreement and related C-2 Warrants were as follows:

	As of May 7, 2021	
	Upon Completion of SPAC merger	
	Quantity	Price
Series C-2 Redeemable Convertible Preferred Stock Purchase Right	7,994,442	\$ 2.00
Series C-2 Warrant exercisable upon SPAC merger	21,159,364	\$ 0.00007
Total Proceeds Upon Exercise		

The C-2 warrants and Purchase Rights were exercised in conjunction with the Business Combination which closed on October 8, 2021 and the Company received proceeds of \$15,559 thousand, which were net of \$439 thousand in issuance costs, see Note 3.

The table below summarizes the shares subject to C-2 Purchase Right activity during the year ended December 31, 2021:

	December 31, 2020	Extinguished	Exercised	December 31, 2021
Series C-2 Purchase Right	39,971,716	26,231,295	13,740,421	—

The Company recorded net increases in the derivative liability of \$223,165 thousand and \$11,532 thousand for the years ended December 31, 2021 and 2020, respectively, for changes in the estimated fair value of the Series C-2 Redeemable Convertible Preferred Stock Purchase Right and C-2 Warrant exercisable upon completion of the Business Combination.

As of December 31, 2021 and 2020, the derivative liability associated with the C-2 Purchase Right was zero and \$22,911 thousand, respectively.

#### **Legacy ESS Warrants**

Legacy ESS periodically issued warrants ("Legacy ESS warrants") in conjunction with the issuance of preferred stock or debt. As of December 31, 2021 and 2020, the following Legacy ESS warrants were outstanding:

	2021	2020
Common Stock Warrants	—	450,153
Series B Preferred Warrants	—	2,007,308
Series C-1 Preferred Warrants	—	103,107
Total Warrants	—	2,560,568

Legacy ESS outstanding warrants as of December 31, 2020 include awards issued in conjunction with stock and debt issuances discussed within Note 10.

Legacy ESS Series B redeemable convertible preferred stock warrants and Series C redeemable convertible preferred stock warrants were liability awards. Refer to Note 16.

Legacy ESS Series B redeemable convertible preferred stock warrants were issued at exercise prices ranging from \$0.0007 per share to \$0.83 per share. 100,161 shares of Series B redeemable convertible preferred stock warrants had a ten-year exercise period and the remainder did not expire until a significant transaction had occurred, as defined by the warrant purchase agreement. The warrants were fully vested at the issuance date.

Legacy ESS Series C-1 and C-2 redeemable convertible preferred stock warrants were issued with prices ranging from \$0.00007 to \$1.25 per share, a life of ten years and were fully vested at issuance.

Legacy ESS common stock warrants, all issued at a price of \$0.0007 per share, were recorded at fair value within equity. Legacy ESS common stock warrants were fully vested at issuance and did not expire until a significant transaction has occurred, as defined by the Warrant Purchase Agreement.

The table below shows the Legacy ESS warrant activities during the year ended December 31, 2021:

	December 31, 2020	Issued	Exercised	December 31, 2021
Common Stock Warrants	450,153	—	450,153	—
Series B Preferred Stock Warrants	2,007,308	—	2,007,308	—
Series C-1 Preferred Stock Warrants	103,107	—	103,107	—
Series C-2 Preferred Stock Warrants	—	22,021,284	22,021,284	—
Total Warrants	<u>2,560,568</u>	<u>22,021,284</u>	<u>24,581,852</u>	<u>—</u>

The warrants were valued using the following assumptions:

	For the year ended December 31, 2021	
	Preferred B warrants	Preferred C warrants
Expected volatility	80 %	60% - 80%
Expected term (in years)	2.00	2.00
Risk-free interest rate	0.16% - 0.28%	0.16% - 0.32%
Dividend yield	0 %	0 %

	As of December 31, 2020	
	Preferred B warrants	Preferred C warrants
Expected volatility	80 %	80 %
Expected term (in years)	2.00	2.00
Risk-free interest rate	0.13 %	0.13 %
Dividend yield	0 %	0 %

In connection with the Business Combination, all Legacy ESS warrants were exercised during the year ended December 31, 2021.

### 13. COMMON STOCK WARRANTS

ESS assumed all warrants issued by STWO upon completion of the Business Combination (see Note 3). As of December 31, 2021, the Company had 7,377,913 Public Warrants, 3,500,000 Private Warrants and 583,334 Earnout Warrants outstanding.

As part of STWO's initial public offering, 8,333,287 Public Warrants were sold. The Public Warrants entitle the holder thereof to purchase one share of common stock at a price of \$11.50 per share, subject to adjustments. The Public Warrants may be exercised only for a whole number of shares of common stock. No fractional shares will be issued upon exercise of the warrants. The Public Warrants will expire five years after completion of the business combination, on October 8, 2026, or earlier upon redemption or liquidation. The Public Warrants are listed on the NYSE under the symbol "GWH.W."

The Company may call the Public Warrants for redemption starting anytime, in whole and not in part, at a price of \$0.01 per warrant, so long as the Company provides not less than 30 days' prior written notice of redemption to each warrant holder, and if, and only if, the reported last sale price of common stock equals or exceeds \$18.00 per share or \$10.00 per share for any 20 trading days within a 30-trading day period ending on the third trading day prior to the date the Company sends the notice of redemption to the warrant holders provided there is an effective registration statement covering the shares of common stock issuable upon exercise of the warrants.

The Company may call the Public Warrants for redemption starting anytime, in whole and not in part, at a price of \$0.10 per warrant, so long as the Company provides not less than 30 days' prior written notice of redemption to each warrant holder; provided that holders will be able to exercise their warrants on a cashless basis prior to redemption and receive a number of shares determined based on the redemption date fair market value of the shares, and if, and only if, the reported last sale price of common stock equals or exceeds \$10.00 per share or \$10.00 per share for any 20 trading days within a 30-trading day period ending on the third trading day prior to the date the Company sends the notice of redemption to the warrant holders provided there is an effective registration statement covering the shares of common stock issuable upon exercise of the warrants.

Simultaneously with STWO's initial public offering, STWO consummated a private placement of 4,666,667 Private Warrants with STWO's sponsor. In connection with the Business Combination, STWO's sponsor agreed to forfeit 583,333 Private Warrants. Of the remaining 4,083,334 Private Warrants, 3,500,000 were immediately vested and 583,334 warrants (the "Earnout Warrants") were vested upon meeting certain Earnout Milestone Events on November 9, 2021. Each Private Warrant and Earnout Warrant is exercisable for one share of common stock at a price of \$11.50 per share, subject to adjustment.

The Private Warrants and Earnout Warrants, post vesting on November 9, 2021, are identical to the Public Warrants, except that the Private Warrants and Earnout Warrants and the shares of common stock issuable upon exercise of the Private Warrants are not transferable, assignable or salable until 30 days after the completion of a Business Combination, subject to certain limited exceptions. Additionally, the Private Warrants and Earnout Warrants are non-redeemable so long as they are held by the initial purchasers or such purchasers' permitted transferees. If the Private Warrants and Earnout Warrants are held by someone other than their initial purchasers or their permitted transferees, then the Private Warrants and Earnout Warrants will be redeemable by the Company and exercisable by such holders on the same basis as the Public Warrants. Additionally, if the Company redeems the public warrants when the common stock equals or exceeds \$10.00 per share for any 20 trading days within a 30-day period ending on the third trading day prior to the date the Company sends the notice of redemption to warrant holders and the closing price of the common share for any 20 trading days within the same period is less than \$18.00 per share, the Company must concurrently redeem the Private Warrants and Earnout Warrants.

The table below shows the common stock warrant activities during the year ended December 31, 2021:

	December 31, 2020	Issued	Exercised	December 31, 2021
Earnout Warrants	—	583,334	—	583,334
Public Warrants	—	8,333,287	955,374	7,377,913
Private Warrants	—	3,500,000	—	3,500,000
<b>Total Common Stock Warrants</b>	<b>—</b>	<b>12,416,621</b>	<b>955,374</b>	<b>11,461,247</b>

The Company's common stock warrants were initially recorded at fair value upon completion of the Business Combination and are adjusted to fair value at each reporting date based on the market price of the Public Warrants, with the change in fair value recorded as a component of other income and expense in the consolidated statements of

operations. For the year ending December 31, 2021, the Company recorded a net increase to the liabilities for Earnout Warrants, Public Warrants and Private Warrants of \$974 thousand, \$14,476 thousand and \$5,355 thousand, respectively.

The Company received proceeds of \$10,987 thousand related to the exercise of 955,374 Public Warrants during the year ending December 31, 2021.

#### **14. EMPLOYEE STOCK PURCHASE PLAN**

The Company adopted an Employee Stock Purchase Plan (the “ESPP Plan”) in connection with the consummation of the Business Combination on October 8, 2021. All qualified employees may voluntarily enroll to purchase the Company’s common stock through payroll deductions at a price equal to 85% of the lower of the fair market values of the stock as of the beginning or the end of the offering periods. An employee’s payroll deductions under the ESPP Plan are limited to 15% of the employee’s compensation. As of December 31, 2021, 3,060,000 shares were reserved for future issuance under the ESPP Plan.

#### **15. STOCK-BASED COMPENSATION PLAN**

##### ***2014 Equity Incentive Plan***

The Company has a stock-based compensation plan called the 2014 Equity Incentive Plan (“2014 Plan”). Under the 2014 Plan, the Company is authorized to issue 15,482,675 shares of common stock. The stock awards may be issued as Incentive Stock Options (“ISO”), Non-statutory Stock Options (“NSO”), Stock Appreciation Rights, Restricted Stock Awards, or Restricted Stock Unit Awards. Only employees are eligible to receive ISO awards. Employees, directors, and consultants who are providing continuous service to the Company are eligible to receive stock awards other than ISOs.

No Stock Appreciation Rights, Restricted Stock Awards, or Restricted Stock Unit Awards are outstanding as of December 31, 2021 and 2020.

Option prices for incentive stock options are normally set at not less than the fair market value of the Company’s common stock at the date of grant. Employee options generally cliff vest at the end of the first year and then 1/48<sup>th</sup> of the original grant over the remaining three years; however, some vesting dates granted under the 2014 Plan began prior to the grant date, which accelerated the vesting period for the related options. The Board has the power to accelerate the vesting of options granted. There were no accelerations during fiscal years 2020 and 2021. Options were contingent on continued employment with the Company. Grants expired 10 years from the date of grant.

Each Legacy ESS option from the 2014 Plan that was outstanding immediately prior to the Business Combination, whether vested or unvested, was converted into an option to acquire a number of shares of the Company’s common stock (each such option, an “Exchanged Option”) equal to the product (rounded down to the nearest whole number) of (i) the number of shares of Legacy ESS common stock subject to such Legacy ESS option immediately prior to the Business Combination and (ii) the Per Share Consideration, at an exercise price per share (rounded up to the nearest whole cent) equal to (A) the exercise price per share of such Legacy ESS option immediately prior to the consummation of the Business Combination, divided by (B) the Per Share Consideration. Except as specifically provided in the Merger Agreement, following the Business Combination, 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 former Legacy ESS option immediately prior to the consummation of the Business Combination. All stock option activities were retroactively restated to reflect the Exchanged Options.

##### ***2021 Equity Incentive Plan***

In October 2021, the Board of Directors of the Company adopted the ESS Tech Inc. 2021 Equity Incentive Plan (the “2021 Plan”). The 2021 Plan became effective upon consummation of the Business Combination. Under the 2021 Plan, the Company is authorized to issue 12,210,000 shares of common stock. The stock awards may be issued as ISO, NSO, Stock Appreciation Rights, Restricted Stock Awards, or Restricted Stock Unit Awards. The number of Shares available for issuance under the 2021 Plan will be increased on the first day of each fiscal year beginning with the 2022 fiscal year and ending with the 2031 Fiscal Year, in an amount equal to the least of (i) 15,260,000 Shares, (ii) five percent (5%) of the outstanding shares on the last day of the immediately preceding fiscal year, or (iii) such number of shares determined by the Company no later than the last day of the immediately preceding fiscal year. As of January 1, 2022, the number of Shares available for issuance under the 2021 Plan was increased by 5,400,000 in accordance with the plan and as approved by the Board.

The stock awards may be issued as ISO, NSO, Stock Appreciation Rights, Restricted Stock Awards, or Restricted Stock Unit Awards. Only employees are eligible to receive ISO awards. Employees, directors, and consultants who are providing continuous service to the Company are eligible to receive stock awards other than ISOs.

Option prices for incentive stock options are set at the fair market value of the Company's common stock at the date of grant. Employee options generally cliff vest at the end of the first year and then 1/48<sup>th</sup> of the original grant over the remaining three years. Grants expire 10 years from the date of grant.

No ISOs, NSOs, Restricted Stock Awards, nor Stock Appreciation Rights are outstanding as of December 31, 2021.

#### **Shares Available for Future Grant**

As of December 31, 2021, shares available for future grant under the Company's 2021 Plan was 9,785,574 shares, which includes shares assumed from the Company's 2014 Plan.

Stock option and RSU activity, prices, and values adjusted by the Per Share Consideration, during the year ended December 31, 2021 is as follows (in thousands, except for share, per share, and contractual term data):

	Options Outstanding				Restricted Stock Units	
	Number of shares	Weighted average exercise price	Weighted average remaining contractual term (years)	Aggregate intrinsic values (\$'000s)	Number of plan shares outstanding	Weighted average grant date fair value per Share
Balances as of December 31, 2019	2,104,223	\$ 0.37	7.82	\$ 821		
Recapitalization Impact	995,215	(0.12)				
Balances at December 31, 2019	3,099,438	\$ 0.25	7.82	821		
Granted	3,271,856	0.33				
Exercised	(108,999)	0.06				
Forfeited	(529,873)	0.29				
Balances as of December 31, 2020	5,732,422	\$ 0.30	8.23	4,333		
Granted	1,454,549	1.75			3,392,153	\$ 10.69
Exercised	(2,496,070)	0.27				
Forfeited	(894,371)	0.46				
Balances as of December 31, 2021	3,796,530	\$ 0.83	8.08	40,274	3,392,153	10.69
Options vested and exercisable - December 31, 2020	2,825,238	\$ 0.26	7.21	2,215		
Options vested and exercisable - December 31, 2021	1,827,374	\$ 0.31	7.20	20,337		

The aggregate intrinsic value is the fair market value on the reporting date less the exercise price for each option.

The aggregate intrinsic value of the options exercised was \$6,244 thousand and \$48 thousand during the years ended December 31, 2021 and 2020, respectively.

The fair value of each stock option award is estimated on the date of the grant using the Black-Scholes Merton option-pricing model. For options granted during the years ended December 31, 2021, and 2020, respectively, the weighted average estimated fair value using the Black-Scholes Merton option pricing model was \$5.63 and \$0.65 per option, respectively.

In accordance with ASC 718, the fair value of each option grant has been estimated as of the date of grant using the following weighted average assumptions:

	2021	2020
Risk-free rate	1.01 %	0.93 %
Expected dividends	—	—

Expected term	6 years	6 years
Expected volatility	75.14 %	71.06 %

The compensation expense is allocated on a departmental basis, based on the classification of the award holder. The following table presents the amount of stock-based compensation related to stock-based awards to employees on the Company's consolidated statements of operations and comprehensive loss during the years ended December 31, 2021 and 2020 (in thousands):

	2021	2020
Research and development	\$ 2,233	\$ 79
Sales and marketing	213	47
General and administrative	5,476	184
Total stock-based compensation	\$ 7,922	\$ 310

As of December 31, 2021, there was approximately \$16,949 thousand of unamortized stock-based compensation cost related to unvested stock options and RSUs, which was expected to be recognized over a weighted average period of 2.15 years.

## 16. FAIR VALUE MEASUREMENTS

The Company follows ASC 820, *Fair Value Measurements*, which establishes a common definition of fair value to be applied when U.S. GAAP requires the use of fair value, establishes a framework for measuring fair value, and requires certain disclosure about such fair value measurements. The following table presents the Company's fair value hierarchy for its financial assets and liabilities measured at fair value on a recurring basis (in thousands):

December 31, 2021	Level 1	Level 2	Level 3	Total
Assets:				
Cash equivalents and restricted cash:				
Money market funds	\$ 237,897	\$ —	\$ —	\$ 237,897
Certificate of deposit	—	125	—	125
Total assets	\$ 237,897	\$ 125	\$ —	\$ 238,022
Liabilities:				
Earnout warrant liabilities	\$ —	\$ 1,476	\$ —	\$ 1,476
Public common stock warrants	18,666	—	—	18,666
Private common stock warrants	—	8,855	—	8,855
Total liabilities	\$ 18,666	\$ 10,331	\$ —	\$ 28,997
December 31, 2020				
Assets:				
Cash equivalents and restricted cash:				
Money market funds	\$ 3,046	\$ —	\$ —	\$ 3,046
Certificate of deposit	—	326	—	326
Total assets	\$ 3,046	\$ 326	\$ —	\$ 3,372
Liabilities:				
Derivative liabilities	\$ —	\$ —	\$ 22,911	\$ 22,911
Warrant liabilities	—	—	3,329	3,329
Total liabilities	\$ —	\$ —	\$ 26,240	\$ 26,240

For fiscal year 2020 and 2021, there were no transfers among Level 1, Level 2, or Level 3 categories. The carrying amounts of the Company's notes payable, and accounts payable approximate their fair values due to their short maturities.

*Level 1 Assets:*

The Company invests in money market funds that have maturities of 90 days or less. Money market funds are classified as cash equivalents and are recorded at their carrying value, which approximates fair value.

*Level 2 Assets:*

The Company invests in a certificate of deposit with a maturity of one year from purchase date. The certificate of deposit is classified as restricted cash and is recorded at its carrying value, which approximates fair value.

*Level 1 Liabilities:*

The Company values its Public Common Stock warrants based on the market price of the warrant.

*Level 2 Liabilities:*

The Company values its Earnout Warrant liabilities and Private Common Stock warrants based on the market price of the Company's Public Common Stock warrants.

*Level 3 Liabilities:*

**Bridge Loan**

The Company accounted for the Bridge Loan under the fair value option election wherein the Bridge Loan was initially measured at its issue-date fair value and then subsequently re-measured at estimated fair value on a recurring basis at each reporting date. As a result of applying the fair value option, direct costs and fees related to the Bridge Loan were expensed as incurred.

The fair value of the Bridge Loan was based on significant inputs including, estimated time to maturity, which causes them to be classified as a Level 3 measurement within the fair value hierarchy. The valuation used assumptions and estimates the Company believed would be made by a market participant in making the same valuation. The Bridge Loan was repaid on October 8, 2021 as part of the Business Combination. See Note 10 for further details.

**Legacy ESS Warrants**

Freestanding warrants to purchase redeemable convertible preferred stock were accounted for as liability awards and recorded at fair value on their initial issuance date and adjusted to fair value at each reporting date, with the change in fair value being recorded in the Consolidated Statement of Operations and Other Comprehensive Income. The warrants were accounted for as liabilities as the underlying preferred shares were contingently redeemable upon occurrence of a change in control, which was outside the control of the Company.

The Company measured its warrant liabilities using Level 3 unobservable inputs within the Black-Scholes Merton option-pricing model. The Company used various key assumptions, such as the fair value of redeemable convertible preferred stock Series B and Series C, the volatility of peer companies' stock prices, the risk-free interest rate based on the U.S. treasury yield, and the expected term (based on remaining term to a significant event). The Company measured the fair value of the redeemable convertible preferred stock warrants at each reporting date, with subsequent gains and losses from remeasurement of Level 3 financial liabilities recorded through other expense, net in the Statements of Operations and Comprehensive Loss.

In connection with the Business Combination, all Legacy ESS warrants were exercised during the year ended December 31, 2021.

**Rights to Purchase Legacy ESS Series C-2 Redeemable Convertible Preferred Stock**

Legacy ESS's Series C Preferred Stock Purchase Agreement initially provided additional committed funding of up to \$79,999 thousand, through the purchase of up to 39,971,716 shares of Series C-2 redeemable convertible preferred stock based on the completion of certain operational milestones at a predetermined price of \$2.00 per share, to certain Series C-1 Investors. This commitment was called the Series C-2 Redeemable Convertible Preferred Stock Issuance Right, see Note 12.

The value of the Series C-2 Redeemable Convertible Preferred Stock Issuance Right was determined based on significant inputs not observable in the market, which represented a Level 3 measurement within the fair value hierarchy.

The Company utilized a probability weighting of successful completion of the Business Combination versus probability of the Company staying private in establishing the quantity of purchase rights to value and the fair value of the Series C-2 Redeemable Convertible Preferred Stock Issuance Right. The fair value of the Series C-2 Redeemable Convertible Preferred Stock Issuance Right was determined using a discounted cash flow model, which took into

account the estimated value of Series C-2 stock, estimated time to purchase, probability of purchase and the risk-free interest rate based on the U.S. treasury yield. The Company measured the fair value of the Series C-2 Redeemable Convertible Preferred Stock Issuance Right at each reporting date, with subsequent gains and losses from remeasurement of Level 3 financial liabilities recorded through other expense, net in the Statements of Operations and Comprehensive Loss. The Company included the valuation of the related Series C-2 warrants that were only exercisable upon completion of the Business Combination with the valuation of the Series C-2 Convertible Preferred Stock Issuance Right.

The following table sets forth a summary of changes in the fair value of the Company's level 3 liabilities at fair value on a recurring basis for the years ended December 31, 2021 and 2020 (in thousands):

	2021	2020
Bridge loan:		
Beginning balance January 1	\$ —	\$ —
Fair value of Bridge loan funded	20,000	—
Accrued interest	1,578	—
Change in fair value	—	—
Repayment of loan principal and interest	(21,578)	—
Ending balance December 31	—	—
Warrant liabilities:		
Beginning balance January 1	3,329	1,989
Change in fair value	17,753	1,296
Fair value of warrants issued	5,096	44
Fair value of warrants exercised	(26,178)	—
Ending balance December 31	—	3,329
Series C-2 Convertible Preferred Stock Issuance Right liability:		
Beginning balance January 1	22,911	11,379
Change in fair value	223,165	11,532
Fair value of derivatives extinguished	(23,152)	—
Fair value of Series C-2 Convertible Preferred Stock Issuance Right exercised	(222,924)	—
Ending balance December 31	—	22,911
Total	\$ —	\$ 26,240

## 17. INCOME TAXES

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. The significant components of deferred tax assets and liabilities are as follows (in thousands):

	As of December 31,	
	2021	2020
Deferred Tax Assets:		
Net operating losses	\$ 24,655	\$ 11,566
Tax credit carryforward	292	47
Non-qualifying stock options	1,143	—
Other	1,231	837
Deferred tax assets	27,321	12,450
Valuation allowance	(27,321)	(12,450)
Deferred tax assets, net of valuation allowance	\$ —	\$ —

ASC Topic 740 requires that the tax benefit of net operating losses, temporary differences and credit carryforwards be recorded as an asset to the extent that management assesses that realization is "more likely than not." Realization of the future tax benefits is dependent on the Company's ability to generate sufficient taxable income within the carryforward period. Because of the Company's history of operating losses, management believes that recognition of the deferred tax assets arising from the above-mentioned future tax benefits is currently not likely and, accordingly,

has provided a valuation allowance for fiscal years 2021 and 2020. The valuation allowance increased by \$14,871 thousand during the year ended December 31, 2021.

As of December 31, 2021, the Company has federal and state net operating loss carryforwards of \$94,058 thousand and \$94,023 thousand, respectively. Federal net operating losses generated prior to 2018 will start to expire in 2032. Federal net operating losses generated after 2017 do not expire. The state net operating losses will begin to expire in 2027. The Company also has federal research and development tax credit carryforwards totaling \$584 thousand. The federal research and development credit carryforwards begin to expire in 2039, unless previously utilized.

The effective tax rate of the Company's provision for income taxes differs from the federal statutory rate as follows:

	Years Ended December 31,	
	2021	2020
Tax computed at federal statutory rate	21.0 %	21.0 %
State tax, net of federal tax benefit	0.6	3.0
Stock compensation	(0.1)	(0.2)
Transaction costs related to the Business Combination	(0.2)	—
Warrant liabilities revaluation	(1.7)	(8.9)
Derivative liabilities revaluation	(9.8)	—
Earnout shares liabilities revaluation	(6.8)	—
R&D tax credits	—	0.1
Other	0.1	—
Valuation allowance	(3.1)	(15.0)
<b>Income tax expense (benefit)</b>	<b>— %</b>	<b>— %</b>

The changes in the Company's uncertain tax positions are summarized as follows (in thousands):

Balance as of December 31, 2019	\$ 12
Additions in 2020	35
Balance as of December 31, 2020	\$ 47
Additions in 2021	245
Balance as of December 31, 2021	\$ 292

During the years ended December 31, 2021 and 2020, the Company recognized uncertain tax positions of \$245 thousand and \$35 thousand, respectively, related to a reduction of the research and development credit deferred tax asset. Unrecognized tax benefits may change during the next twelve months for items that arise in the ordinary course of business. The Company does not expect a material change to its unrecognized tax benefits over the next twelve months that would have an adverse effect on its operating results.

The Company recognizes interest and penalties accrued on any unrecognized tax benefits as a component of income tax expense. The Company had no accrued interest or penalties related to uncertain tax positions as of 2021 and 2020.

The Company files federal and certain state income tax returns, which provide varying statutes of limitations on assessments. However, because of net operating loss carryforwards, substantially all tax years since inception remain open to federal and state tax examination.

## 18. DEFINED CONTRIBUTION PLAN

The Company has a 401(k) plan to provide defined contribution retirement benefits for all employees who have completed six months of service. Employees may elect to contribute a portion of their pretax compensation to the 401(k) plan, subject to annual limitations. The Company may make profit-sharing contributions at the discretion of the Board of Directors. Employee contributions are fully always vested. For the years ended December 31, 2021 and 2020, the Company contributed \$292 thousand and \$173 thousand, respectively.

## **19. RELATED PARTY TRANSACTIONS**

During the year ended December 31, 2020, the Company hired consultants through one of its Board members to review its technology. The Company paid \$31 thousand to the consultants. In December 2020, the Company also entered into a sales agreement for the purchase and installation of one Energy Warehouse with a related party.

In April 2021, the Company signed a framework agreement with one of its investors, SB Energy Global Holdings One Ltd (“SBE”), to supply energy storage products to SBE in support of its market activities. Under this agreement, the Company has made various commitments to meet SBE’s potential need for energy storage products and is obligated to reserve a certain percentage of our manufacturing capacity to meet SBE’s future needs, subject to periodic reviews of its firm and anticipated orders. To date, no orders have been placed under the framework agreement.

Additionally, the Company entered into a preferred financing equity transaction with SBE and Breakthrough Energy Ventures, LLC as discussed in Note 12. These related parties were also issued 6,707,318 of the Earnout Shares discussed in Note 3.

As of December 31, 2021, the Company had recorded accounts receivable of \$66 thousand and deferred revenue of \$171 thousand for sales of Energy Warehouse products to related parties based on the December 2020 sales agreement above.

## **20. SUBSEQUENT EVENTS**

In February 2022, the Compensation Committee of the Board of Directors granted various employees RSU awards under which the holders have the right to receive an aggregate of approximately 2,100,000 shares of the Company’s common stock. These awards vest in sixteen equal quarterly installments beginning on May 20, 2022.

## **ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE**

As previously reported on our Current Report on Form 8-Ks filed with the SEC on October 28, 2021 and November 22, 2021, upon the approval of the audit committee of our board of directors, Marcum LLP (“Marcum”) was dismissed as our independent registered public accounting firm, and Ernst & Young LLP (“EY”) was engaged as our independent registered public accounting firm effective following the completion of Marcum’s review of the Affected Period (as defined therein). Marcum served as our independent registered public accounting firm since July 21, 2020, our inception as STWO, whereas EY served as the independent registered public accounting firm for Legacy ESS, since 2021, prior to the consummation of the Business Combination. The audit committee decided to engage EY because, for accounting purposes, our historical financial statements include a continuation of the financial statements of our business.

The report of Marcum on the Company’s financial statements as of December 31, 2020 and for the period from July 21, 2020 (inception) through December 31, 2020, contained an explanatory paragraph related to substantial doubt to continue as a going concern but did not contain an adverse opinion or a disclaimer of opinion, and were not qualified or modified as to uncertainties, audit scope or accounting principles.

During the period from July 21, 2020 (the Company’s inception) to December 31, 2020 and the subsequent interim period through October 28, 2021, there were no “disagreements” (as such term is defined in Item 304(a)(1)(iv) of Regulation S-K and the related instructions) with Marcum on any matter of accounting principles or practices, financial statement disclosure, or auditing scope or procedures, which disagreements, if not resolved to the satisfaction of Marcum, would have caused Marcum to make reference thereto in its report on the Company’s pre-merger financial statements as of December 31, 2020 and for the period from July 21, 2020 (the Company’s inception) to December 31, 2020. During the period from July 21, 2020 (the Company’s inception) to December 31, 2020 and the subsequent interim period through October 28, 2021, there have been no “reportable events” (as such term is defined in Item 304(a)(1)(v) of Regulation S-K), except for a material weakness in the Company’s pre-merger internal control over financial reporting related to the accounting for warrants issued by the Company.

During the period from July 21, 2020 (the Company’s inception) through October 28, 2021, neither the Company, nor any party on behalf of the Company, consulted with EY with respect to either (i) the application of accounting principles to a specified transaction, either completed or proposed, or the type of the audit opinion that might be rendered with respect to the Company’s consolidated financial statements, and no written report or oral advice was provided to the Company by EY that was an important factor considered by the Company in reaching a decision as to any accounting, auditing or financial reporting issue, or (ii) any matter that was subject to any disagreement (as that term is defined in Item 304(a)(1)(iv) of Regulation S-K and the related instructions) or a reportable event (as that term is defined in Item 304(a)(1)(v) of Regulation S-K).

### **ITEM 9A. CONTROLS AND PROCEDURES**

#### *Disclosure Controls and Procedures*

We have established disclosure controls and procedures that are designed to ensure that the information required to be disclosed by us in the reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in SEC rules and forms and that such information is accumulated and communicated to management, including our principal executive officer and principal financial officer, as appropriate to allow timely decisions regarding required disclosure.

Under the supervision and with the participation of our management, including our principal executive officer and principal financial officer, we conducted an evaluation of the effectiveness of our disclosure controls and procedures as required under Rules 13a-15(e) and 15d-15(e) under the Exchange Act) as of the end of the period covered by this report. We previously identified two material weaknesses for Legacy ESS due to several deficiencies that were identified in the operating effectiveness of controls over (1) the identification and review of technical issues associated with research and development, raw materials purchase commitments and equity processes which resulted in adjustments to restate the 2019 financial statements and correct the 2020 financial statements; and (2) the review and analysis of certain transactions within Legacy ESS’ financial statement close process. We also previously identified a material weakness in our internal control over financial reporting of STWO related to the accounting for a significant and unusual transaction related to the warrants we issued in connection with our initial public offering.

We have determined that we have remediated the material weakness for Legacy ESS related to the identification and review of technical issues associated with research and development, raw materials purchase commitments and equity processes which resulted in adjustments to restate the 2019 financial statements and correct the 2020 financial statements and the material weakness related to STWO as of December 31, 2021.

The second material weakness for Legacy ESS related to the operating effectiveness of controls over the review and analysis of certain transactions within ESS' financial statement close process remains unremediated. Therefore, our principal executive officer and principal financial officer have concluded that the Company's disclosure controls and procedures were not effective as of December 31, 2021.

#### Management's Remediation Initiatives

We have begun to take steps to remediate the remaining identified unremediated material weakness and enhance our internal controls, and we are planning to do the following:

- We have hired additional personnel and are continuing to expand our team. We are further designing and implementing a formalized internal control framework, including over journal entries and management review controls.
- We are continuing our efforts to improve and strengthen our control processes and procedures to fully remediate these deficiencies. Our management will continue to work with our auditors and other outside advisors to ensure that our controls and procedures are adequate and effective.

We expect that the remediation of this material weakness will be completed by December 31, 2022. However, we cannot make any assurances that we will successfully remediate this material weakness within our anticipated timeframe.

#### *Management's Report on Internal Controls over Financial Reporting*

As discussed elsewhere in this Annual Report on Form 10-K, we completed the Business Combination on October 8, 2021. Prior to the Business Combination, our predecessor, STWO, was 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 businesses. As a result, previously existing internal controls are no longer applicable or comprehensive enough as of the assessment date, as STWO's operations prior to the Business Combination were insignificant compared to those of the consolidated entity post-Business Combination. As a result, and due to the timing of the Business Combination, management was unable, without incurring unreasonable effort or expense, to complete an assessment of our internal control over financial reporting ("ICFR") as of December 31, 2021. Accordingly, we are excluding management's report on internal control over financial reporting pursuant to Section 215.02 of the SEC Division of Corporation Finance's Regulation S-K Compliance & Disclosure Interpretations. Despite not conducting a formal assessment regarding ICFR, as discussed above, management identified a material weakness in its internal controls related to the review and analysis of certain transactions within ESS' financial statement close process.

This Annual Report on Form 10-K does not include an attestation report of our independent registered public accounting firm as permitted in this transition period under the rules of the SEC for newly public companies.

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

Other than the actions taken as described in Management's Remediation Initiatives above to improve the Company's internal control over financial reporting, there have been no changes in our internal control over financial reporting during the fiscal year ended December 31, 2021 that materially affected, or which are reasonably likely to materially affect, our internal control over financial reporting.

#### **ITEM 9B. OTHER INFORMATION**

None.

#### **ITEM 9C. DISCLOSURE REGARDING FOREIGN JURISDICTIONS THAT PREVENT INSPECTIONS**

Not applicable.

### **PART III**

#### **ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE**

The information required by this item is incorporated by reference in our Proxy Statement relating to our 2022 Annual Meeting of Stockholders. The Proxy Statement will be filed with the SEC within 120 days of the fiscal year ended December 31, 2021.

#### **ITEM 11. EXECUTIVE COMPENSATION**

The information required by this item is incorporated by reference in our Proxy Statement relating to our 2022 Annual Meeting of Stockholders. The Proxy Statement will be filed with the SEC within 120 days of the fiscal year ended December 31, 2021.

**ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS**

The information required by this item is incorporated by reference in our Proxy Statement relating to our 2022 Annual Meeting of Stockholders. The Proxy Statement will be filed with the SEC within 120 days of the fiscal year ended December 31, 2021.

**ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE**

The information required by this item is incorporated by reference in our Proxy Statement relating to our 2022 Annual Meeting of Stockholders. The Proxy Statement will be filed with the SEC within 120 days of the fiscal year ended December 31, 2021.

**ITEM 14. PRINCIPAL ACCOUNTING FEES AND SERVICES**

The information required by this item is incorporated by reference in our Proxy Statement relating to our 2022 Annual Meeting of Stockholders. The Proxy Statement will be filed with the SEC within 120 days of the fiscal year ended December 31, 2021.

**PART IV****ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES**

## (a) Financial Statements and Schedules

The financial statements are set forth under Item 8 of this Annual Report on Form 10-K. Financial statement schedules have been omitted since they are either not required, not applicable, or the information is otherwise included.

## (b) Exhibit Listing

Exhibit	Description	Form	File No.	Exhibit No.	Incorporated by Reference
					Filing Date
2.1#	<a href="#">Merger Agreement, dated as of May 6, 2021, by and among STWO, SCharge Merger Sub, Inc. and ESS Tech, Inc.</a>	8-K	001-39525	2.1	May 7, 2021
3.1	<a href="#">Amended and Restated Certificate of Incorporation of ESS</a>	8-K	001-39525	3.1	October 15, 2021
3.2	<a href="#">Amended and Restated Bylaws of ESS</a>	8-K	001-39525	3.2	October 15, 2021
4.1	<a href="#">Warrant Agreement, dated September 16, 2020, by and between STWO and Continental Stock Transfer &amp; Trust Company</a>	S-4	333-257232	4.1	June 21, 2021
4.2	<a href="#">Description of securities</a>	10-K	001-39525	4.2	May 24, 2021
4.3	<a href="#">Assignment, Assumption and Amendment Agreement to the Warrant Agreement, dated October 8, 2021, by and among ESS, STWO, Continental Stock Transfer &amp; Trust Company, Computershare Trust Company, N.A. and Computershare, Inc.</a>	8-K	001-39525	4.2	October 15, 2021
10.1	<a href="#">Form of Registration Rights Agreement</a>	8-K	001-39525	10.4	May 7, 2021
10.2	<a href="#">Form of Subscription Agreement</a>	8-K	001-39525	10.1	May 7, 2021
10.3	<a href="#">Sponsor Letter Agreement, dated as of May 6, 2021</a>	8-K	001-39525	10.3	May 7, 2021
10.4	<a href="#">Stockholders' Agreement, dated as of May 6, 2021, by and among ESS, SBE and BEV</a>	8-K	001-39525	10.5	October 15, 2021
10.5#	<a href="#">Framework Agreement, dated as of March 31, 2021, by and between SBE US Holdings One, Inc. and ESS Tech, Inc.</a>	S-4	333-257232	10.13	June 21, 2021

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10.6	<a href="#">Office Lease Agreement, dated July 24, 2017, by and between ESS Tech, Inc. and Parkway Woods Business Park, LLC</a>	S-4	333-257232	10.8	June 21, 2021
10.7†	<a href="#">Energy Storage Systems, Inc. 2014 Equity Incentive Plan</a>	S-4	333-257232	10.6	June 21, 2021
10.8†	<a href="#">Amendment to ESS Tech, Inc. 2014 Equity Incentive Plan</a>	S-4	333-257232	10.7	June 21, 2021
10.9†	<a href="#">2021 Equity Incentive Plan and form of award agreements thereunder</a>	S-4/A	333-257232	Annex D	September 9, 2021
10.10†	<a href="#">2021 Employee Stock Purchase Plan</a>	S-4/A	333-257232	Annex E	September 9, 2021
10.11†	<a href="#">Outside Director Compensation Policy</a>	8-K	001-39525	10.12	October 15, 2021
10.12	<a href="#">Form of Indemnification Agreement</a>	8-K	001-39525	10.2	October 15, 2021
10.13†	<a href="#">Employment Agreement, dated April 1, 2021, by and between ESS Tech, Inc. and Eric Dresselhuys</a>	S-4	333-257232	10.10	June 21, 2021
10.14†	<a href="#">Offer Letter, dated July 31, 2019, by and between ESS Tech, Inc. and Amir Moftakhar</a>	S-4	333-257232	10.9	June 21, 2021
10.15†	<a href="#">Employment Agreement, dated May 23, 2021, by and between ESS Tech, Inc. and Craig Evans</a>	S-4	333-257232	10.11	June 21, 2021
10.16†	<a href="#">Employment Agreement, dated March 3, 2015, by and between ESS Tech, Inc. and Yang Song</a>	S-4	333-257232	10.12	June 21, 2021
16.1	<a href="#">Letter from Perkins &amp; Company, P.C.</a>	S-4/A	333-257232	16.1	July 28, 2021
16.2	<a href="#">Letter from Marcum LLP</a>	Post-Effective Amendment No. 1 to S-1	333-260693	16.2	December 9, 2021
21.1	<a href="#">List of Subsidiaries</a>	S-1	333-260693	21.1	November 2, 2021
23.1*	<a href="#">Consent of Ernst &amp; Young LLP, Independent Registered Public Accounting Firm</a>				
31.1*	<a href="#">Certification of Principal Executive Officer pursuant to Rule 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as amended, with respect to the Company's Annual Report on Form 10-K for the year ended December 31, 2021</a>				
31.2*	<a href="#">Certification of Principal Financial Officer pursuant to Rule 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as amended, with respect to the Company's Annual Report on Form 10-K for the year ended December 31, 2021</a>				
32.1**	<a href="#">Certification of Principal Executive Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, with respect to the Company's Annual Report on Form 10-K for the year ended December 31, 2021</a>				

32.2\*\* [Certification of Principal Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, with respect to the Company's Annual Report on Form 10-K for the year ended December 31, 2021](#)

101.INS\* Inline XBRL Instance Document – the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document

101.SCH\* Inline XBRL Taxonomy Extension Schema Document

101.CAL\* Inline XBRL Taxonomy Extension Calculation Linkbase Document

101.LAB\* Inline XBRL Taxonomy Extension Label Linkbase Document

101.PRE\* Inline XBRL Taxonomy Extension Presentation Linkbase Document

† Indicates management contract or compensatory plan or arrangement.

# Portions of this exhibit have been omitted in accordance with Item 601 of Regulation S K.

\* Filed herewith.

\*\* These exhibits are furnished with this Annual Report on Form 10-K and are not deemed filed with the Securities and Exchange Commission and are not incorporated by reference in any filing of ESS Tech, Inc. under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended, whether made before or after the date hereof and irrespective of any general incorporation language contained in such filings.

#### **ITEM 16. FORM 10-K SUMMARY**

Not applicable.

## SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Act of 1934, the registrant has duly caused this Annual Report on Form 10-K to be signed on its behalf by the undersigned, thereunto duly authorized.

March 3, 2022

### ESS TECH, INC.

By: */s/ Eric P. Dresselhuys*  
Name: Eric P. Dresselhuys  
Title: Chief Executive Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities indicated on March 3, 2022.

<b>Signature</b>	<b>Title</b>
<i>/s/ Eric P. Dresselhuys</i> <b>Eric P. Dresselhuys</b>	<i>Chief Executive Officer and Director</i> (principal executive officer)
<i>/s/ Amir Mofitakhar</i> <b>Amir Mofitakhar</b>	<i>Chief Financial Officer</i> (principle financial officer)
<i>/s/ Jeff Bodner</i> <b>Jeff Bodner</b>	<i>Chief Accounting Officer</i> (principle accounting officer)
<i>/s/ Craig Evans</i> <b>Craig Evans</b>	<i>President and Director</i>
<i>/s/ Raffi Garabedian</i> <b>Raffi Garabedian</b>	<i>Director</i>
<i>/s/ Claudia Gast</i> <b>Claudia Gast</b>	<i>Director</i>
<i>/s/ Rich Hossfeld</i> <b>Rich Hossfeld</b>	<i>Director</i>
<i>/s/ Michael Niggli</i> <b>Michael Niggli</b>	<i>Director</i>
<i>/s/ Kyle Teamey</i> <b>Kyle Teamey</b>	<i>Director</i>
<i>/s/ Alexi Wellman</i> <b>Alexi Wellman</b>	<i>Director</i>
<i>/s/ Daryl Wilson</i> <b>Daryl Wilson</b>	<i>Director</i>

**Consent of Independent Registered Public Accounting Firm**

We consent to the incorporation by reference in the following Registration Statements:

- (1) Registration Statement on Form S-1 (No. 333-260693) of ESS Tech, Inc. pertaining to the registration of shares of its common stock, and
- (2) Registration Statement on Form S-8 (No. 333-261649) of ESS Tech, Inc. pertaining to the ESS Tech, Inc. 2021 Equity Incentive Plan, ESS Tech, Inc. 2021 Employee Stock Purchase Plan and Amended Energy Storage Systems, Inc. 2014 Equity Incentive Plan

of our report dated March 3, 2022, with respect to the consolidated financial statements of ESS Tech, Inc. included in this Annual Report (Form 10-K) of ESS Tech, Inc. for the year ended December 31, 2021.

/s/ Ernst & Young LLP

Portland, Oregon  
March 3, 2022

**CERTIFICATION  
PURSUANT TO RULE 13a-14 AND 15d-14  
UNDER THE SECURITIES EXCHANGE ACT OF 1934, AS AMENDED**

I, Eric P. Dresselhuys, certify that:

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

March 3, 2022

By: */s/ Eric P. Dresselhuis*  
Eric P. Dresselhuis  
Chief Executive Officer  
*(Principal Executive Officer)*

**CERTIFICATION  
PURSUANT TO RULE 13a-14 AND 15d-14  
UNDER THE SECURITIES EXCHANGE ACT OF 1934, AS AMENDED**

I, Amir Moftakhar, certify that:

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

March 3, 2022

By: */s/ Amir Moftakhar*  
Amir Moftakhar  
Chief Financial Officer  
*(Principal Financial Officer)*

**CERTIFICATION PURSUANT TO  
18 U.S.C. 1350  
(SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002)**

In connection with the Annual Report of ESS Tech, Inc (the “Company”) on Form 10-K for the year ended December 31, 2021, as filed with the Securities and Exchange Commission on the date hereof (the “Report”), I, Eric P. Dresselhuys, 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 the best of my knowledge:

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

March 3, 2022

By: */s/ Eric P. Dresselhuys*  
Name: Eric P. Dresselhuys  
Title: Chief Executive Officer  
  
*(Principal Executive Officer)*

**CERTIFICATION PURSUANT TO  
18 U.S.C. 1350  
(SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002)**

In connection with the Annual Report of ESS Tech, Inc (the "Company") on Form 10-K for the year ended December 31, 2021, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Amir Moftakhar, 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 the best of my knowledge:

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

March 3, 2022

By: */s/ Amir Moftakhar*  
Name: Amir Moftakhar  
Title: Chief Financial Officer

*(Principal Financial Officer)*