Filed pursuant to Rule 424(b)(3)
Registration No. 333-272832

PROSPECTUS SUPPLEMENT NO. 3
(to Prospectus dated August 9, 2023)

TIGO ENERGY, INC.

5,768,750 Shares of Common Stock Issuable Upon Exercise of Warrants
49,734,570 Shares of Common Stock
18,750 Warrants

This prospectus supplement updates and supplements the prospectus dated August 9, 2023 (as may be further supplemented or amended from time to time, the "Prospectus"), which forms a part of our Registration Statement on Form S-1 (File No. 333-272832).

This prospectus supplement is being filed to update and supplement the Prospectus with the information contained in our Annual Report on Form 10-K for the fiscal year ended December 31, 2023, filed with the U.S. Securities and Exchange Commission on March 21, 2024 (the "Annual Report"). Accordingly, we have attached the Annual Report to this prospectus supplement.

This prospectus supplement is not complete without the Prospectus. This prospectus supplement should be read in conjunction with the Prospectus, which is required to be delivered with this prospectus supplement. If there is any inconsistency between the information in the Prospectus and this prospectus supplement, you should rely on the information in this prospectus supplement.

Our shares of common stock, par value $0.0001 per share (the "Common Stock") are listed on the Nasdaq Stock Market LLC ("Nasdaq") under the symbol "TYGO". On March 20, 2024, the closing price of our Common Stock was $0.99 per share. Our public warrants were listed on Nasdaq under the symbol "TYGOW." On September 8, 2023, all of our public warrants and private warrants that remained outstanding following 5:00 p.m. New York City time were redeemed.

We are an "emerging growth company" and a "smaller reporting company" as such terms are defined under the federal securities laws and, as such, are subject to certain reduced public company reporting requirements.

Investing in our securities involves a high degree of risk. You should review carefully the risks and uncertainties described under the heading "*Risk Factors*" beginning on page 10 of the Prospectus, and under similar headings in any amendments or supplements to the Prospectus.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the adequacy or accuracy of the Prospectus. Any representation to the contrary is a criminal offense.

The date of this prospectus supplement is March 21, 2024.

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, 2023

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 001-40710

Tigo Energy, Inc.
(Exact name of Registrant as specified in its Charter)

Delaware	**83-3583873**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**
655 Campbell Technology Parkway, Suite 150	
Campbell, California	**95008**
(Address of principal executive offices)	**(Zip Code)**

Registrant's telephone number, including area code: (408) 402-0802

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

Title of each class	Trading Symbol	Name of each exchange on which registered
Common Stock, par value $0.0001 per share	**TYGO**	**The Nasdaq Stock Market LLC**

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 15(d) of the Act. YES ☐ NO ☒

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

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

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

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

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements. ☒

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant's executive officers during the relevant recovery period pursuant to §240.10D-1(b). ☐

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

The aggregate market value of the voting and non-voting common equity held by non-affiliates of the Registrant as of June 30, 2023, the last business day of the Registrant's most recently completed second fiscal quarter, was approximately $281.9 million, calculated by using the closing price of the Registrant's Common Stock on such date on the Nasdaq Stock Market LLC of $18.55.

The number of shares of Registrant's Common Stock outstanding as of March 15, 2024 was 59,689,553.

DOCUMENTS INCORPORATED BY REFERENCE

The registrant intends to file a proxy statement pursuant to Regulation 14A within 120 days of the end of the fiscal year ended December 31, 2023. Portions of such proxy statement are incorporated by reference into Part III of this Annual Report on Form 10-K.

EXPLANATORY NOTE

Unless the context indicates otherwise, references to the "Company," "we," "us" and "our" refer to Tigo Energy, Inc. (formerly known as Roth CH Acquisition IV Co.), a Delaware corporation, and its consolidated subsidiaries following the Business Combination (defined below). References to "ROCG" refer to Roth CH Acquisition IV Co. prior to the Business Combination and references to "Legacy Tigo" refer to Tigo Energy, Inc. prior to the Business Combination.

ROCG was originally formed as a Delaware corporation in February of 2019 for the purpose of effecting a merger, share exchange, asset acquisition, share purchase, recapitalization, reorganization, or other similar business combination with one or more businesses. On August 10, 2021, ROCG consummated its initial public offering (the "IPO"), following which its securities began trading on the Nasdaq Capital Market ("Nasdaq").

On December 5, 2022, ROCG, Roth IV Merger Sub Inc., a Delaware corporation and a wholly-owned subsidiary of ROCG ("Merger Sub"), and Legacy Tigo, entered into an Agreement and Plan of Merger, as amended on April 6, 2023 (the "Merger Agreement"), pursuant to which, among other transactions, on May 23, 2023 (the "Closing Date"), Merger Sub merged with and into Legacy Tigo (the "Merger"), with Legacy Tigo surviving the Merger as a wholly-owned subsidiary of ROCG (the Merger, together with the other transactions described in the Merger Agreement, the "Business Combination"). In connection with the closing of the Business Combination, ROCG changed its name to "Tigo Energy, Inc." For accounting purposes, and in accordance with generally accepted accounting principles, ROCG was treated as the acquired company and Legacy Tigo was treated as the acquirer.

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K contains statements that are “forward-looking looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995. These forward-looking statements include, without limitation, statements regarding the financial position, business strategy and the plans and objectives of management for future operations. These statements constitute projections, forecasts and forward-looking statements, and are not guarantees of performance. Such statements can be identified by the fact that they do not relate strictly to historical or current facts. When used in this Annual Report on Form 10-K, words such as “anticipate,” “believe,” “continue,” “could,” “estimate,” “expect,” “intend,” “may,” “might,” “plan,” “possible,” “potential,” “predict,” “project,” “should,” “strive,” “would” and similar expressions may identify forward-looking statements, but the absence of these words does not mean that a statement is not forward-looking. When the Company discusses its strategies or plans, the Company is making projections, forecasts or forward-looking statements. Such statements are based on the beliefs of, as well as assumptions made by and information currently available to, the Company’s management.

You should not place undue reliance on these forward-looking statements. The forward-looking statements contained in this Annual Report on Form 10-K are only predictions based on the Company’s current expectations and projections about future events and are subject to a number of risks, uncertainties and assumptions that may cause actual results or performance to be materially different from those expressed or implied by these forward-looking statements. These risks include, but are not limited to, the following, which also serves as a summary of the principal risks of an investment in our securities:

Risks Related to Our Business and Industry

- If we are unable to achieve adequate revenue growth while our expenses increase, we may not achieve or maintain profitability in the future or have sufficient cash to fund our future operations.
- Macroeconomic conditions in the markets in which we operate, as well as inflation, instability of financial institutions, rising interest rates and recessionary concerns, may adversely impact our industry, business and financial results.
- Demand for our solar energy hardware and software solutions may not grow or may grow at a slower rate than we anticipate.
- Developments in alternative technologies or improvements in other forms of distributed solar energy generation may have a material adverse effect on demand for our offerings.
- The solar industry has historically been cyclical and experienced periodic downturns, including the current downturn.
- Our MLPEs (as defined below) may not achieve broader market acceptance.
- We have in the past, and may in the future, face product liability lawsuits which, regardless of outcome, can be expensive to defend, divert the attention of management, and lead to reputational harm.
- If we fail to retain our key personnel or if we fail to attract additional qualified personnel, we may not be able to achieve our anticipated level of growth and our business could suffer.
- We anticipate substantial growth in revenue from our GO Energy Storage Systems (“GO ESS”) product line. Should a market fail to develop for our GO ESS product line, our actual operating results may differ materially from the forecasted results.

Risks Related to Legal, Compliance and Regulations

- Our business could be harmed by a reduction, elimination or expiration of government subsidies and economic incentives for on-grid solar electricity applications.
- Our management has limited experience in operating a public company.
- Our significant international operations subject us to additional risks compared to those of domestic companies, including trade tariffs or other trade barriers, and the interpretation and enforcement of laws and regulations in various jurisdictions.
- Current or future litigation or administrative proceedings could have a material adverse effect on our business, financial condition and results of operations.

Operating Risks

- Our financial condition and results of operations and other key metrics are likely to be affected by seasonal trends and construction cycles.
- Defects, recalls, or performance problems in our products or delays, disruptions, or quality control problems in our manufacturing operations could result in loss of customers, reputational damage, and decreased revenue, and we may be the subject of numerous claims, including warranty, indemnity, and product liability claims arising from defective products.
- If our estimates of useful life for our solar energy hardware and software solutions are inaccurate, our business and financial results could be adversely affected.
- We expect to incur research and development costs and devote resources to identifying and commercializing new products and services, which may never result in revenue to us.
- The loss of one or more of our major customers could have an adverse effect on our business, financial condition and results of operations.
- Our hardware and software-enabled services involve a lengthy sales and installation cycle, and if we fail to close sales on a regular and timely basis it could adversely affect our business, financial condition and results of operations.
- The growth of our business depends on customers renewing their monitoring services subscriptions.

Competition Risks

- We face supply chain competition, including competition from businesses in other industries, which could result in insufficient inventory and negatively affect our results of operations.
- The rapidly evolving and competitive nature of the solar industry makes it difficult to evaluate our future prospects.

Risks Related to Intellectual Property and Technology

- Our patent applications may not result in issued patents, and our issued patents may not provide adequate protection.
- Our failure to protect our intellectual property rights may undermine our competitive position, and litigation to protect our intellectual property rights may be costly.
- Any unauthorized access to, disclosure, or theft of personal information we gather, store, or use could harm our reputation and subject us to claims or litigation.

Risks Related to Our Financial Condition and Liquidity

- We are under continuous pressure to reduce the prices of our products, which has adversely affected, and may continue to adversely affect, our gross margins.
- If we do not forecast demand for our products accurately, we may experience product shortages, delays in product shipment, excess product inventory, difficulties in planning expenses or disputes with suppliers, any of which will adversely affect our business and financial condition.

Risks Related to the Ownership of Our Securities

- The price of our Common Stock has been, and may continue to be, volatile.
- We may be subject to securities litigation, which is expensive and could divert management's attention.
- We have in the past, and may in the future, fail to maintain proper and effective internal controls over financial reporting, which could impair our ability to produce accurate and timely financial statements, cause investors to lose confidence in our financial reporting and the trading price of our Common Stock may decline.
- The Company may not be able to comply with the continued listing standards of Nasdaq, which could limit investors' ability to make transactions in the Company's securities and subject the Company to additional trading restrictions.
- If securities analysts do not publish research or reports about us, or if they issue unfavorable commentary about us or our industry or downgrade our common stock, the price of our common stock could decline.

- Future sales, or the perception of future sales, of our Common Stock by us or our existing stockholders in the public market could cause the market price for our common stock to decline.
- The other factors described in "Part I, Item 1A" in this Annual Report.

It is not possible for the management of the Company to predict all risks, nor can the Company assess the impact of all factors on the Company's business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements the Company may make. In light of these risks, uncertainties and assumptions, the forward-looking events and circumstances discussed in this Annual Report on Form 10-K may not occur, and actual results could differ materially and adversely from those anticipated or implied in the forward-looking statements in this Annual Report on Form 10-K.

The forward-looking statements included in this Annual Report on Form 10-K are made only as of the date hereof. You should not rely upon forward-looking statements as predictions of future events. Although the Company believes that the expectations reflected in its forward-looking statements are reasonable, the Company cannot guarantee that the future results, levels of activity, performance or events and circumstances reflected in the forward-looking statements will be achieved or occur. The Company does not undertake any obligation to update publicly any forward-looking statements for any reason after the date of this Annual Report on Form 10-K to conform these statements to actual results or to changes in expectations, except as required by law. You should read this Annual Report on Form 10-K and the documents that have been filed as exhibits hereto with the understanding that the actual future results, levels of activity, performance, events and circumstances of the Company may be materially different from what is expected.

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PART I

Item 1. Business.

Overview

Our mission is to deliver smart system solutions, combining hardware and software, which enhance safety, increase energy yield, and lower operating costs of residential, commercial, and utility-scale solar systems. We believe we are a worldwide leader in the development and delivery of products and solutions that are flexible and dependable, increasing the energy generation of solar energy systems.

We have served the solar energy industry with advanced power electronics, including the manufacturing and development of our Module Level Power Electronics (“MLPEs”), since our inception in 2007. Until 2021, we primarily focused on our MLPEs, which are devices that reside under the solar panel and improve safety features and energy production for the installer and system owner. Our MLPEs are designed to be highly flexible solutions that work with other inverters and modules, providing the installer with an open system solution and a variety of choices when designing a system for the consumer.

Although the solar optimizer and inverter space has been historically served by two major suppliers, we expect to attract new customers and gain market share by expanding sales of our MLPEs, which provide solar panel power optimization and rapid shutdown, our GO Energy Storage Systems (“GO ESS”), (formerly referred to as the Tigo EI Solution), which provides solar energy storage management capabilities, and our Energy Intelligence (“EI”) platform which provides monitoring and energy demand forecasting capabilities. We began to offer our GO ESS to residential customers in the United States (“U.S.”) and Europe in late 2021 and 2022, respectively, and added our energy demand forecasting software capabilities through our acquisition of Foresight Energy, Ltd. in the first quarter of 2023. Our products power everything from single-digit kilowatt residential systems to commercial, industrial, and utility systems, scaling to hundreds of megawatts on rooftop, ground-mounted, and floating applications.

We primarily offer our products and services through distributors and solar installers. We have a worldwide footprint, which allows us to capitalize on key markets in Asia, the Americas, and Europe, the Middle East and Africa (“EMEA”). As of December 31, 2023, we generated approximately 75.3% and 17.3% of our revenue from markets in EMEA and the Americas, respectively, our two largest markets. As of December 31, 2022, we generated approximately 64.0% and 27.3% of our revenue from markets in EMEA and the Americas, respectively.

Industry

The solar energy industry is composed of three distinct markets. The residential market represents the use of solar energy in private homes. The utilities market represents the use of solar energy deployed by companies that sell the energy to homeowners and businesses. All other activity generally falls under the broad umbrella of commercial & industrial. We sell our products and solutions to customers in all three markets.

For the commercial and industrial (“C&I”), and utility solar market markets, we combine our MLPE technology with our cloud-based software platform for advanced energy monitoring and control. Our MLPE products maximize performance, enable real-time energy monitoring, and provide code-required rapid shutdown at the module level. These products are certified under international standards, and the Rapid Shut Down system is certified with hundreds of inverters from more than fifteen manufacturers. This open-platform approach gives our customers significantly more freedom to right-size solar systems with the features and inverters they want.

For the residential solar and solar-plus-storage markets, we develop and manufacture MLPE devices, inverters, battery storage systems, and related energy management hardware under the GO ESS residential brand. The Tigo GO ESS residential product portfolio is designed for ease-of-installation, more efficient system maintenance and management, and increased flexibility for installers. In combination with the Tigo EI mobile app and a browser-based program, the Tigo GO ESS platform provides system diagnosis, over-the-air software upgrades, and energy production monitoring that serves both homeowners and installers.

Our Solution and Operations

Our Products

TS4 Flex MLPE/Optimizer

Our MLPEs have been our primary product since our inception in 2007 and account for the substantial majority of our revenues. Marketed as Tigo Flex MLPE, these devices are an integral part of the string-inverter type of solar architecture, performing key energy management and optimization functions directly at the solar module before the direct current energy passes to other energy conversion components. To date, we have shipped MLPE devices worldwide and have installations in over 100 countries on all seven continents. Our TS4 Flex MLPEs were designed to provide innovative solutions that enhance safety with rapid shutdown, decrease operating costs with remote monitoring and increase energy production of photovoltaic ("PV") systems with optimization. Our MLPEs provide customers with the opportunity to choose the functionalities applicable to their PV system, including:

- ***Rapid Shutdown.*** Our rapid shutdown MLPEs provide safety and adherence to local standards (where applicable) and safe access to PV systems on roofs by rapidly taking the system voltage to a safe level. The Tigo TS4-A-F 25A and Tigo TS4-A-2F 25A rapid shutdown devices have the ability to shutdown panels with immediate effect to provide advanced first-responder safety functionality for solar modules rated up to 700W, including bifacial modules. Both products feature compatibility with Pure Signal™ technology in Tigo RSS Transmitters and pair with hundreds of third-party solar inverters to deliver design and installation flexibility for solar installers and engineering, procurement and construction ("EPC") firms.
- ***Module-Level Monitoring.*** Our monitoring MLPEs provide detailed information on ongoing operations and maintenance. The Tigo TS4-A-M provides module-level monitoring, which can reduce operations and maintenance costs by allowing installers to pinpoint performance issues, troubleshoot remotely, and eliminate manual testing of each solar panel.
- ***Rapid Shutdown and Module-Level Monitoring.*** The Tigo TS4-A-S combines rapid shutdown and module-level monitoring functions, presenting a unified solution for solar modules up to 700W. This device encapsulates all the features of our TS4-A-F 25A, TS4-A-2F 25A, and TS4-A-M models, offering a comprehensive device in one solution.
- ***Rapid Shutdown, Module-Level Monitoring and Optimization.*** Finally, the Tigo TS4-A-O provides the complete breadth of the solution, combining rapid shutdown, monitoring, and optimization, which combats shading and the effects of disparate aging and soiling on modules to ensure the entire system produces efficiently out of each and every module. The TS4-A-O provides monitoring capabilities down to the module-level and allows the PV system to comply with rapid shutdown directives. Specifically, this product maximizes production of the solar solution, helping to overcome shade and panel efficiency mismatch. Our internal studies show that the TS4-A-O increases production by an average of 6.6% in comparison with our MLPE models without optimizers, as measured by Tigo's "Reclaimed Energy" feature, which is included within our EI Platform and indicates the amount of energy harvested by our optimizers.

Our MLPEs are compatible with nearly every module and inverter in the market due to their open system architecture. As a result, installers use our MLPE for its ability to interface with a wide range of products. This is particularly true for installers and EPC firms that deploy large-scale C&I solar systems since components in those systems are usually custom assemblies designed to fit the precise size and cost constraints.

The majority of our MLPE products include software tools that are designed to improve the installer experience around commissioning, monitoring, and maintaining fleets of solar installations. Our software tools give our installers detailed visibility into module-level operations so that our installers can assess performance characteristics, diagnose issues, and provide high quality service to their end customers, the utility, commercial, industrial, and residential system owners.

This software is intended to simplify installations by providing installers with a single source of information for their entire fleet of installations. The software tools aggregate performance metrics of all our product offerings into one platform. The platform allows our installers to isolate specific locations and products and filter by factors such as technology and location to view fleet, site and module-specific performance characteristics. In addition, the platform allows for complete system monitoring by connecting inverters, batteries, power meters and all other equipment on site to view the entire system operation. This allows installers to obtain a complete view of all major components in an installation, review production and consumption data by hour, minute, day and month, and view real-time power flows and lifetime performance statistics.

Our software tools deliver module-level monitoring which allows users to pinpoint performance issues, the ability to troubleshoot remotely and eliminate manual testing of each solar panel resulting in an overall improvement of the user experience for installers and customers. The software platform can detect system level, string level and module-level issues and provide real-time alerts when a performance or safety issue arises. The platform also simplifies the commissioning process by providing greater system visibility and information to end installers.

GO ESS

The GO ESS product line offers a complete energy storage system comprised of the GO Battery, GO Inverter, GO Link/Automatic Transfer Switch (“ATS”), and GO Electric Vehicle (“EV”) Charger.

- ***GO Battery:*** The Tigo GO Battery provides energy resilience in the event of a grid outage and optimizes energy consumption based on rate plans for today’s home energy needs. The Tigo GO Battery can be configured for both whole-home and essential load backup to satisfy a comprehensive array of home energy needs. Our batteries include three 3.3 kWh modules, which provides for a total capacity of 9.9 kWh per enclosure, with a usable capacity of 9.0kWh. This easily allows up to 12kWh of total energy in the European Union (“EU”) market and up to 40kWh in the U.S. market. In addition, our batteries are compatible with our smart app that offers 24/7 visibility of system behavior and intelligent control over system and battery management. The built-in communication hub, when paired with Tigo TS4 Flex MLPE, provides module level monitoring, optimization, and fire safety features.
- ***GO Inverter:*** The Tigo GO Inverter offers high-efficiency energy conversion for home consumption or export to the grid. Our inverter is a hybrid inverter, meaning that it can accept an input from the Tigo GO Battery (as further described above) and PV array. Tigo offers 3.8kW, 7.6kW and 11.4kW GO Inverter models in the U.S. market and similar models in the EU. When combined with our line of TS4 MLPE products, our inverter provides module-level optimization, monitoring and rapid shutdown and enables home energy production and consumption when paired with a home energy storage system like the Tigo GO Battery.
- ***GO ATS:*** The Tigo GO ATS is a necessary component for battery backup of on-grid systems. Our ATS comes in two models, a 50-amp essential load panel and a 200-amp whole home back-up. The whole home backup model includes an optional electric-vehicle charger and generator connection. Our ATS works as a gatekeeper by sensing grid loss and safely switches from grid plus solar/battery to solar/battery only.
- ***GO EV Charger:*** Our GO EV Charger is designed to significantly reduce transportation costs. The GO EV Charger is fully compatible with both EU single- and three-phase Tigo residential solar solutions, offering a customizable charging experience. With the Tigo EI App, users can easily set their charging schedule and choose their preferred energy source, whether it is solar, grid, or a combination of both. The GO EV Charger features multiple charging modes, adjustable current limits, and flexible scheduling with specific time windows. Enhanced with built-in radio frequency identification (“RFID”) for secure user access, dynamic load balancing for efficient power distribution, and a robust indoor/outdoor protective enclosure, the GO EV Charger is designed for reliability and safety. Additionally, it incorporates advanced safety features like integrated protective earthed neutral (“PEN”) protection and current failure monitoring, coupled with encrypted transport layer security (“TLS”) communication for secure operations.

The GO ESS product line, available for the U.S. residential market since September 2021 and to select customers in the European market since November 2022, offers flexible components that can be purchased together or individually, and is compatible with other brands. While some installers may mix and match other products with our optimizers, we anticipate that we will offer a compelling value proposition such that their best option will be our complete GO ESS product line.

Our GO ESS product line allows flexibility in an integrated system that is convenient to maintain through our EI mobile app and a browser-based program. The EI Platform provides system diagnosis and over-the-air software upgrades and enables energy production monitoring for greater visibility and understanding of energy systems. We provide product performance and support to homeowners and installers with industry-leading warranties on all hardware.

For the years ended December 31, 2023 and 2022, we generated approximately $5.0 million and $1.4 million in revenue, respectively, from offerings of our GO ESS product line in the United States. In November 2022, we began offering this system to select customers in our European market. As of December 31, 2023 and 2022, we have generated approximately $13.4 million and $3.2 million, respectively, in revenue from offerings of our GO ESS product line. We believe that our various offerings in our GO ESS product line will generate an increasing amount of revenue in the future as the demand for energy storage and management increases. Furthermore, we anticipate this offering will deepen our relationship with installers by providing them with a comprehensive all-in-one solution.

Our Services

Monitoring Services

Our EI software platform is provided complimentary with the majority of our MLPE product line; however, our customers can elect to purchase our premium monitoring services, which allows for increased data granularity and historical data storage, for an additional annual fee. Our monitoring services revenues represented less than 1% of the Company's total net revenues for the years ended December 31, 2023 and 2022.

Tigo Predict+

Tigo Predict+ technology within our Tigo EI software platform marks what we believe is a significant advancement in the realm of energy demand forecasting. This innovative Software as a Service ("SaaS") solution leverages artificial intelligence ("AI") and machine learning technologies to offer accurate, customizable forecasting models for electricity generation and consumption. Designed to cater to the needs of utilities, independent power producers ("IPPs"), and grid planners, Tigo Predict+ provides leading analytical capabilities. Its comprehensive suite of data connectors, APIs, and post-processing models are designed to provide rapid integration, facilitating full data connectivity within hours. The platform's in-house machine learning models and fully automated AI engines present an innovative approach to data analysis, offering insights into consumption patterns, customer group profitability, and expected behavior all from a single interface. The Company began offering the Predict+ service in January 2023. Predict+ revenue represented less than 1% of the Company's total net revenue for the year ended December 31, 2023.

Competitive Strengths

Tigo's MLPE, GO ESS product line, and EI Platform improve the safety, energy yield, and cost of solar across all three end markets (Residential, C&I, and Utility). We believe our key competitive advantages include:

- **Open Architecture.** Our MLPE, GO ESS, and EI Platform are designed to work with other vendors in the industry, unlike some competitor offerings that only work within their own family of products. In particular, our MLPE architecture works with most string inverters or modules.
- **Selective Optimization.** The Tigo system architecture is identical to a string inverter's architecture, allowing the optimizers to remain in a complete bypass mode until mismatch occurs that requires its intervention. It does not rely on distributed direct current ("DC") to direct current ("DC/DC") stage or direct current to alternating current ("DC/AC") conversion, which allows for a decreased duty cycle among all other leading solutions in the market. Because of these guiding principles of operation, Tigo optimizers achieve maximum energy harvest with up to 99.7% efficiency and limit heat dissipation at the back of the module.
- **Selective Deployment.** Tigo's selective deployment accommodates partial placement as needed and can be applied to any module in a single string, minimizes the number of optimizers needed in a tradeoff between cost and performance. Thus, any PV Module in a string that is exposed to shade, higher temperature, or has a higher mismatch characteristic with other modules can be outfitted with an

optimizer. This will ensure the module's own best performance, and equally important, that it will not limit the production of the other, unshaded PV modules in the string.

- **Storage Architecture.** Tigo's storage architecture utilizes a DC coupled system that minimizes losses from the conversion between AC and DC environments. In Tigo's DC coupled system, DC solar electricity flows from solar panels into Tigo's battery unit, avoiding conversions from DC to AC environments before the electricity is stored in the battery.
- **Inverter Architecture.** Our GO Inverter is a hybrid inverter, meaning that it can accept an input from multiple GO Battery (as further described above) stacks and the PV array. The GO Inverter is available in multiple sizes in all regions where it is available, matching nearly all residential power requirements. They can efficiently operate with a solar panel array oversized by 200% in the event customers want to maximize their solar panel system to be able to better charge batteries.

Business Strategy

Our objective is to deliver smart hardware and software solutions to our customers in the residential, commercial, and utility-scale solar market groups. Key elements of our strategy include:

- **Expand U.S. Residential Sales.** We will seek to capitalize on our strong position in the U.S. C&I markets to expand our market share position in residential sales. In particular, we are looking to further grow our share of the U.S. residential market through offerings with U.S. residential solar providers.
- **Expand Our GO ESS Product Line.** We commenced sales of our GO ESS product line in the U.S. in September 2021, and in November 2022 we began offering the product to select customers in Europe. Our GO ESS product line is an extension of our current products and services and leverages our existing go-to-market channels to achieve success. We are seeking to expand sales of the GO ESS product line to drive revenues and further our entry into the energy storage and management markets.
- **Increase Energy Production.** Our research and development team is focused on continuing to improve the performance of our MLPE solution by expanding its functionality and ensuring it is compatible with the latest PV module technology.
- **Increase Market Share.** The growth of the renewable energy and solar sectors is driven by three main factors: cost savings, environmental concerns and energy independence. We intend to increase market share by focusing on these factors by delivering solar offerings and solutions that enhance safety, increase energy yield and lower operating costs. To address these factors, we offer products and solutions that enhance safety, increase energy yield, and reduce operating costs, including customizable MLPE systems and our GO ESS product line for detailed module-level monitoring.
- **Customer Service.** Our mission is to deliver products that are productive, reliable, smart, simple and safe to enable customers' storage and energy independence. Our distributors and solar installers are our first point of contact with a potential customer, the homeowner and business user. Our goals are to partner better with these service providers so that we can provide high quality service to our current and future customers. To further enhance our customer service experience, in November 2023, the Company began the Green Glove program. Available to all solar installers, the Green Glove program is specifically designed to deliver a premium support experience that enriches the C&I installer journey from design through commissioning. The Green Glove process starts with a comprehensive design review before installation, in which the Company's support personnel provide valuable insights and guidance. During installation, the support personnel are available on-call at the Company's regional locations to assist and address any concerns. After installation, the support team conducts thorough reviews and follow-up discussions, continually addressing outstanding questions and gathering valuable feedback to enhance the overall installation experience. We believe that the implementation of the Green Glove program, coupled with the reinforcement of the customer experience, could provide us with a competitive advantage.

Our Customers

We currently offer solutions to customers globally in the residential and utilities, and C&I markets. We primarily rely on, and focus our sales efforts on, distributors and installers who assist in selling our product offerings and services to customers. We do, however, make sales directly to end customers when business conditions exist where it may be advantageous for the Company and customer to establish a direct commercial relationship. For the year ended December 31, 2023, no customer accounted for more than 10% of our annual net revenue. For the year ended December 31, 2022, one customer accounted for approximately 10.6% of our annual net revenue. We generate a majority of our revenues in the EMEA and Americas markets, which accounted for 75.3% and 17.3%, respectively, of our revenues in the year ended December 31, 2023. In the year ended December 31, 2022, we generated approximately 64.0% and 27.3% of our revenue from markets in EMEA and the Americas, respectively.

Sales, Marketing and Partnerships

We sell our products and services through three main channels. Primarily, we use solar equipment distributors to leverage their broad sales force, logistics and credit services with installers. We also sell our products and services directly to large installers and EPC firms when the volume is sufficient to drive economies of scale and create an on-going business relationship. In addition, we also sell to inverter suppliers, who integrate our rapid shutdown device into their inverter and then bundle this inverter with our optimizers for a more complete solution.

Our enhanced partnership program seeks to ensure compatibility between our MLPE products and a vast set of third-party inverters, supporting solar installation performance and fulfilling safety code requirements. This formalizes collaboration on technical integrations, product certification, customer support and marketing strategies with major inverter companies. Our enhanced program ensures compatibility across partner inverters and Tigo TS4 units to support solar installation performance and fulfill safety code requirements. All Tigo Enhanced inverters are integrated with Tigo RSS Transmitters to communicate with Tigo TS4-A-F and TS4-A-2F devices.

Manufacturing and Quality Control

Manufacturing

We have designed our manufacturing processes to produce high quality products at competitive costs. Our strategy has three elements: outsource, automate, and localize. We outsource the manufacturing of our products to contract manufacturers in order to access advanced manufacturing equipment, processes, skills and capacity without large capital outlays. We also seek to increase our responsiveness to customers while reducing costs and delivery times.

Our principal contract manufacturers that account for the substantial majority of our products sold are Kinpo Electronics, Inc., headquartered in Taiwan with our products being manufactured in facilities located in Thailand (“Kinpo”) and Asteelflash Suzho Co., Ltd., located in China (“Asteelflash”). By using more than one contract manufacturer with multiple manufacturing locations, we seek to lower our risk profile and build resilience and redundancy into our supply chain.

We entered into a master supply agreement with Kinpo in February 2021 which automatically renews for successive one-year periods unless we deliver written notice of termination to Kinpo at least 30 days prior to the renewal date. We place purchase orders with Kinpo for each transaction and, although Kinpo provides us with forecasted pricing on a rolling twelve-month basis, specific pricing is agreed in each purchase order. We provide a forecast for our product needs and Kinpo is required to reserve capacity for such forecasted needs. Kinpo is required to deliver six months prior notice of its intent to discontinue the manufacture of any of our products.

Asteelflash provides manufacturing services to us for our MLPE products. We entered into a master sales agreement with Asteelflash in May 2016 which automatically renews for successive one-year periods unless either party delivers written notice of termination to Asteelflash or to the other party at least 90 days prior to the renewal date. The agreement may be terminated upon 180 days’ notice by either party. We are issued price quotations from Asteelfash, which specify the itemized pricing of products. The price quotations are reviewed every three months or as otherwise agreed upon by the Company and Asteelflash.

Quality Control

Our reliability methodology includes a multilevel plan with design analysis, subsystem testing of critical components, and integrative testing of design prototypes in large sample groups. As part of our reliability efforts, we subject components to industry standard conditions and tests including in accelerated life chambers that simulate burning, thermal cycling, damp-heat, and other stresses. We also conduct out-of-box audits on our finished products. In addition, reliability tests are conducted on our optimizers, and we test fully assembled products in stress tests and in the field.

Each of our products is tested multiple times throughout the production process in order to ensure product quality prior to its shipment from the manufacturing facility. We employ a serial-number-driven manufacturing process including an auditing and traceability system that allows us to control production line activities, verify correct manufacturing processes and achieve unit-specific traceability. As a part of our quality and reliability approach, failed products from the field are returned and subjected to root cause analysis, the results of which are used to improve our product design and manufacturing processes and further reduce our field failure rate. Our rigorous testing processes have helped us to develop highly reliable products.

Industry Standards

Our products and systems comply with applicable regulatory requirements of the jurisdictions in which they are sold as well as all other major markets around the world. These include safety regulations, electromagnetic compatibility standards and grid compliance. In 2014, the U.S. National Electrical Code (“NEC”) mandated that all PV system circuits installed on or in buildings should include a rapid shutdown function to reduce shock hazard for emergency responders. Our TS4 products have the capability to remotely shut down individual panels and thus meet the new safety standard. Furthermore, the 2017 edition of the NEC requires in-array rapid shutdown that can be met by MLPE, which our technology provides.

Our compliance with the NEC and the equivalent code in Canada with respect to our product’s rapid shutdown capability has been certified by Underwriters Laboratories, a well-known and nationally recognized testing laboratory. We have also been certified by TUVRheinland, a testing laboratory based in Germany, which provides results that are widely accepted by countries outside of the U.S. and Canada. Our products meet the certification standards of the U.S. Federal Communication Commission.

Research and Development

Our research and development team has wide-ranging experience in electrical, mechanical and software engineering. In addition, many members of our research and development team have expertise in solar technologies. As of December 31, 2023, our research and development organization had a headcount of 34 employees and 3 independent contractors. Our research and development expenses totaled $9.5 million and $5.7 million for the years ended December 31, 2023 and 2022, respectively.

We plan to continue to devote substantial resources to research and development with the objectives of developing new products and systems, adding new features to existing products and systems and reducing unit costs of our products. Our development strategy is to identify features, products and systems for both software and hardware that reduce the cost and improve the effectiveness of our solutions for our customers. We measure the effectiveness of our research and development by metrics including product unit cost, efficiency, reliability, power output and ease of use.

Intellectual Property

The success of our business depends, in part, on our ability to maintain and protect our proprietary technologies, information, processes and know-how. We rely primarily on patent, trademark, copyright and trade secrets laws in the U.S. and similar laws in other countries, confidentiality agreements and procedures and other contractual arrangements to protect our technology. As of December 31, 2023, we had 129 granted patents and 25 pending patents. A majority of our patents are related to module-level rapid shutdown, safety, solar production optimization and module-level monitoring. Our issued patents are scheduled to expire between 2025 and 2040. We continually assess opportunities to seek patent protection for those aspects of our technology, designs, methodologies and processes that we believe provide significant competitive advantages.

We rely on trade secret protection and confidentiality agreements to safeguard our interests with respect to proprietary know-how that is not patentable and processes for which patents are difficult to enforce. We believe that many elements of our manufacturing processes involve proprietary know-how, technology or data that are not covered by patents or patent applications, including technical processes, test equipment designs, algorithms and procedures.

We own or have rights to various trademarks and service marks in the U.S. and in other countries, including the Tigo Energy name and logo and we rely on both registration of our marks as well as common law protection where available.

We require that all of our research and development personnel and relevant subcontractors enter into confidentiality and proprietary information agreements with us. These agreements address intellectual property protection issues and require them to assign to us all of the inventions, designs and technologies they develop during the course of their work with us. We also require our customers and business partners to enter into confidentiality agreements before we disclose sensitive aspects of our technology or business plans.

From time to time, we have been, and currently are, subject to claims related to our patent rights. In addition, as part of our overall strategy to protect our intellectual property, we may take, and are currently taking, legal actions to prevent third parties from infringing upon or misappropriating our intellectual property or from otherwise gaining access to our technology. No such claims or legal actions currently involve patents or intellectual property that we consider to be material to our business.

Seasonality

Historically, the majority of our revenues have been generated from customers in the European regions. The Company has experienced higher sales of our products in the second and third quarters and which has been affected by seasonal customer demand trends, including weather patterns and construction cycles. The first and fourth quarters historically have had softer customer demand in our industry due to these same factors. Although these seasonal factors are common in the solar sector, historical patterns should not be considered a reliable indicator of our future sales activity or performance.

Competition

The markets for our solar products are competitive, and we compete with manufacturers of other MLPE systems, in addition to providers of similar technologies to our GO ESS product line, including energy storage systems.

The principal areas in which we compete with other companies include:

- product and system performance and features;
- total cost of ownership;
- reliability and duration of product warranty;
- customer service and support;
- breadth of product line;
- flexibility and open compatibility across systems;

- local sales and distribution capabilities;
- compliance with applicable certifications and grid codes;
- size and financial stability of operations; and
- size of installed base.

Recent market trends show an increased focus on safety features in rooftop installations, and the emergence of standards that are evolving to address such concerns. In particular, the rapid shutdown standards in the U.S. market have led to the introduction of module-level rapid shutdown devices from our competitors. We believe that the existence of rapid shutdown capabilities built into several of our products, including our optimizers, positions us well in this regard and could serve as a competitive advantage. Additionally, in 2023, PV module manufacturers introduced larger PV modules with increased power levels above 500W. This market trend has led to market interest in higher power rating optimizers, micro inverters and other MLPE devices. Our products have been developed to handle up to 700W to keep pace with module manufacturers. In addition, the increasing demand for storage and battery solutions is expected to increase the attachment rate of storage to PV installations in the coming years.

New entrants to the MLPE market, including low-cost Asian manufacturers, have recently announced plans to ship or have already shipped similar products. We believe our optimized inverter system offers significant technology and cost advantages, in addition to offering a competitive differentiation over traditional inverter systems and microinverter technologies. Our primary competitors in the MLPE market are Enphase and SolarEdge.

The markets for our GO ESS product line and EI Platform are also competitive, and we compete primarily with SolarEdge, Enphase, and Tesla, as well as a number of other companies.

Government Regulation and Compliance

Our business activities are global and are subject to various federal, state, local and foreign laws, rules and regulations. For example, substantially all of our import operations are subject to complex trade and customs laws, regulations and tax requirements such as sanctions orders or tariffs set by governments through mutual agreements or unilateral actions. In addition, the countries in which our products are manufactured or imported may adopt laws or regulations requiring in-country manufacturing, which would require that a specified portion of our components or products be manufactured in such a country. Prospective customers may also require that certain goods be manufactured or sourced in-country in order to obtain their business. In-country manufacturing requirements could have a negative impact on our results of operations as we may have limited manufacturing operations in such countries. Further, countries may from time to time impose additional duties, tariffs or other restrictions on our imports or adversely modify existing restrictions. Changes in tax policy or trade regulations, the disallowance of tax deductions on imported merchandise, or the imposition of new tariffs on imported products, could have an adverse effect on our business and results of operations. Compliance with these laws, rules, regulations and any in-country manufacturing requirements has not had, and is not expected to have, a material effect on our capital expenditures and results of operations.

Import Tariffs

Escalating trade tensions between the United States and China have led to increased tariffs and trade restrictions, including tariffs applicable to some of our products. In June 2019, the U.S. trade representative (“USTR”) imposed import tariffs of 25% on a large number of products imported from China, including inverters and power optimizers. On January 15, 2020, the United States and China entered into an initial trade deal, which preserves the initial tariffs from 2018 and indicates additional sanctions may be imposed if China breaches the terms of the deal.

To mitigate the negative effect of increased tariffs, in 2019, we began outsourcing our MLPE manufacturing to Kinpo’s Philippines facility. In late 2021, at Kinpo’s recommendation, such manufacturing capabilities were entirely moved to Thailand due to COVID-19 restrictions. As of December 31, 2023, all of our MLPE products that we import into the U.S. are manufactured in Kinpo’s Thailand facility and are therefore not subject to the aforementioned tariffs. We do not import any other products into the U.S. The GO ESS product line purchased by the Company are imported into the U.S. by the manufacturer.

Privacy and Security Laws

There are privacy and data security laws to which we are currently subject, and/or may in the future be subject. Every U.S. state, members of the European Economic Area (“EEA”), Switzerland, United Kingdom (“UK”), Brazil, Mexico, Australia, New Zealand, China and many other jurisdictions in which we operate have adopted privacy and/or data security laws and regulations which impose significant compliance obligations.

The European Union’s (“EU”) General Data Protection Regulation 2016/679 (“GDPR”), and the GDPR’s equivalent in the UK (“UK GDPR”), are wide-ranging in scope and apply to all organizations that process personal information. The GDPR/UK GDPR impose stringent requirements on organizations that determine the purposes and means of processing personal information (“Controllers”) and organizations that process personal information for and on behalf of Controllers (“Processors”), including for example, robust disclosure requirements to individuals regarding the categories of personal information processed, the purposes for which and manner in which that processing takes place, robust personal information security requirements, comprehensive requirements for maintaining internal compliance documentation relating to the processing of personal information, a comprehensive individual rights regime, specific timelines for reporting personal information breaches to regulators and affected individuals, limitations on retention of personal information, stringent limitations on processing special categories of personal information (such as health data), and obligations when contracting with Processors in connection with the processing of personal information. The GDPR/UK GDPR also impose strict rules on the transfer of personal information outside of the EEA/UK, and provide for the creation of supervisory authorities. If we, or any Processor engaged by us, fail to comply with the GDPR/UK GDPR, or if regulators assert we have failed to comply with these laws, it may lead to regulatory enforcement actions, which can result in monetary penalties of up to the greater of €20.0 million / £17.5 million or 4% of the total worldwide annual turnover of the preceding financial year, whichever is higher, and other administrative penalties. Individuals also have a right to receive compensation for material or non-material damage suffered as a result of a violation of the GDPR/UK GDPR.

The GDPR/UK GDPR requirements apply not only to third-party transactions but may also apply to transfers of personal information between us and our subsidiaries, including employee personal information. The GDPR/UK GDPR have increased our responsibility and potential liability in relation to all types of personal information that we process, and we may be required to put in place additional mechanisms to ensure compliance with the GDPR/UK GDPR, which could increase our cost of doing business. However, despite our ongoing efforts to bring our practices into compliance with the GDPR/UK GDPR, we may not be successful either due to various factors within our control or other factors outside our control.

Additionally, we are governed by the California Consumer Privacy Act of 2018 as amended (“CCPA”), which also imposes certain obligations on businesses in the handling of the personal information of California residents. The CCPA establishes a privacy framework for covered businesses, including an expansive definition of personal information and data privacy rights for California residents. The CCPA provides for significant civil penalties for violating the act. Among other things, the CCPA requires covered companies to provide disclosures to California residents and ways for such residents to opt-out of certain sales of personal information. The CCPA also provides a private right of action and statutory damages for data breaches. In addition, new legislation proposed or enacted in various other states will continue to shape the data privacy environment nationally. Comprehensive data privacy laws in Virginia, Colorado, Connecticut, and Utah went into effect in 2023; data privacy laws in Montana, Oregon, and Texas will take effect in 2024 and laws in four additional states will take effect in 2025. These state laws impose similar obligations on businesses and grant similar rights to consumers as is provided under the CCPA. Some obligations under these state privacy statutes remain unclear, resulting in further legal uncertainty.

The data privacy legislation discussed above exemplifies the vulnerability of our business in the evolving regulatory environment related to personal information. Other states in the U.S. have passed or are considering privacy laws, and additional countries have in recent years implemented new privacy laws. Governments may also expand current regulation or guidance or enact new regulation or guidance related to personal information that could have an impact on our business. Our ability to develop new products or features may decrease and our compliance costs and potential liability may increase with this scattered regulatory environment.

Government Incentives

U.S. federal, state and local government bodies, as well as non-U.S. government bodies provide incentives to owners, distributors, system integrators and manufacturers of solar energy systems to promote solar energy in the form of rebates, tax credits, lower VAT rate and other financial incentives such as system performance payments, payments for renewable energy credits associated with renewable energy generation and exclusion of solar energy systems from property tax assessments. The market for on grid applications, where solar power is used to supplement a customer's electricity purchased from the utility network or sold to a utility under tariff, often depends in large part on the availability and size of these government subsidies and economic incentives, which vary by geographic market and from time to time, thus helping to catalyze customer acceptance of solar energy as an alternative to utility-provided power. The disallowance or changes in government subsidies or economic incentives could have an adverse effect on our business and results of operations.

Our operations are subject to stringent and complex federal, state and local laws and regulations governing the occupational health and safety of our employees and wage regulations. For example, we are subject to the requirements of the federal Occupational Safety and Health Act, as amended, and comparable state laws that protect and regulate employee health and safety.

Inflation Reduction Act of 2022

In August 2022, the Inflation Reduction Act of 2022 (the "IRA") was enacted, which includes extension of the investment tax credit ("ITC") as well as a new advanced manufacturing production tax credit ("AMPTC") to incentivize clean energy component sourcing and production in the United States, including for the production of microinverters. The IRA provides an AMPTC of 11 cents and 6.5 cents per alternating current watt for microinverters and inverters, respectively. Under the IRA, the ITC was extended until 2032 to allow a qualifying homeowner to deduct 30% of the cost of installing residential solar systems from their U.S. federal income taxes, thereby returning a material portion of the purchase price of the residential solar system to homeowners. Under the terms of the current extension, the ITC will remain at 30% through the end of 2032, reduce to 26% for 2033, reduce to 22% for 2034, and further reduce to 0% after the end of 2034 for residential solar systems, unless it is extended before that time. The IRA also included a 10% ITC for solar system components that are manufactured with a minimum threshold of domestic content. We believe the enactment of the IRA is favorable to our overall business worldwide.

New Iterations of Net Metering in California

In December 2022, the California Public Utilities Commission ("CPUC") approved and voted for the third iteration of net metering ("NEM 3.0"), which has been effective since April 15, 2023. The new policy reduces the compensation earned by solar customers selling extra energy to the grid by a substantial amount. The average export rate in California under NEM 3.0 is approximately $0.05/kWh to $0.08/kWh compared to the prior average of $0.25/kWh to $0.35/kWh under NEM 2.0. In November 2023, the CPUC also adopted changes to its Virtual NEM and NEM Aggregation programs that prohibit the netting of import energy charges at multi-meter commercial or agricultural properties with solar energy generated at or adjacent to those properties, except for residential account holders in a multi-family residential property. Both of these policy changes in California reduced demand for solar PV systems in the year ended December 31, 2023, and may continue to do so for future inverter sales. However, the reduction in export compensation under NEM 3.0, coupled with rising utility rates, may encourage deployment of battery energy storage with solar PV systems and mitigate some of the demand reductions.

Environmental, Social and Governance

Tigo products are designed, manufactured, stored and shipped with the goals of energy-efficiency, resource conservation, human ethics and waste management throughout their lifecycle. Our MLPE, communication devices and software are designed to optimize energy production, ensure safety, promote efficient layouts, and reduce the need for on-site monitoring.

We are a member of select solar organizations and non-profits seeking to spread the availability of distributed energy. We provide thought leadership, marketing, training and donations to the North American Board of Certified Energy Practitioners ("NABCEP") and California Solar and Storage Association ("CALSSA"). Our online training sessions, webinars and NABCEP-accredited courses are free and digitally available worldwide on our website. We provide resources in multiple languages and seek to promote them often to spread knowledge about solar energy.

Tigo is committed to accelerating the adoption of solar energy worldwide. We do so while promoting and complying with the latest electrical certifications and requirements that enhance the safety of installers and first responders that interact with solar PV systems. Tigo is an active member of the non-profit organizations CALSSA that does important work to enable safe, affordable access to solar energy for communities. Tigo also works closely with partner companies in the PV industry - including inverter manufacturers, module manufacturers, engineering firms, distributors and more - to ensure compliance with safety codes and measures.

Insurance

We maintain insurance, excess coverage, or reinsurance for property, general liability, international general liability, workers' compensation, foreign voluntary workers' compensation, umbrella, business auto, directors' and officers' liability and other coverage in amounts and on terms deemed adequate by management, based on our actual claims experience and expectations for future claims. However, future claims could exceed our applicable insurance coverage.

Human Capital Resources

As of December 31, 2023, we had 176 full-time employees. Of these full-time employees, 34 were engaged in sales and sales engineering, 72 in operations and customer support, 34 were engaged in research and development, 23 in finance and administrative capacities, and 13 in marketing and strategic marketing. Of our employees, 95 were based in the Americas region, 65 were based in the EMEA region and 16 were based in the APAC region. We also engage independent contractors to support our activities.

None of our employees are represented by a labor union. We have not experienced any employment-related work stoppages, and we consider relations with our employees to be good.

Recruitment

We rely on the success of our recruitment efforts to attract and retain technically skilled people who can support our ongoing innovation and expansion. We aim to be inclusive in our hiring practices focusing on the best talent for the role, welcoming all genders, creeds, ethnicities, abilities and other dimensions of diversity.

Employee benefits

We aim to provide our employees with competitive salaries and benefits that enable them to achieve a good quality of life and plan for the future. Our benefits differ according to local norms and market preferences, but typically include all salary and social benefits required by local law (including retirement saving programs, paid vacation and sick leave) and many additional benefits that go beyond legal requirements in local markets.

Leadership, Training and Development

We aim to provide our employees with advanced professional and development skills so that they can perform effectively in their roles and build their capabilities and career prospects for the future. Our current education and training programs support and encourage educational opportunities for managers and team leaders based on personal development and advancement of our workforce as needed by the business.

Diversity, Equity and Inclusion

We are committed to ensuring that fair and effective procedures are implemented and adhered to when selecting and deploying people to meet organizational needs. We are an equal opportunity employer and are committed to providing a work environment that is free from harassment and discrimination. During the past three years, we have recruited and hired women at all levels. We are striving to increase the presence of women in executive and management positions as part of our target to promote gender parity and equal pay. We are taking active steps to increase the diversity of our workforce and inclusiveness of our employee base globally.

Workplace safety and health

We prioritize our employees by offering comprehensive benefits and promoting health and wellness initiatives. We support a hybrid work model in certain regions and countries, where it aligns with our business requirements. Our commitment is to ensure the safety and health of our employees, and to contribute to the well-being of the communities we serve. This includes equipping our employees with the technology needed for optimal performance in remote settings. We will continue to actively monitor the situation throughout 2024, and we will make further changes to our business operations as may be necessary or appropriate and that we determine are in the best interests of our employees, end-customers, partners, suppliers and stockholders.

Available Information

We file our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and amendments to those reports electronically with the U.S. Securities and Exchange Commission ("SEC") and such reports can be accessed on our Investor Relations website at www.investors.tigoenergy.com. Alternatively, you may access these reports at the SEC's website at www.sec.gov. We make available, free of charge, copies of these reports as soon as reasonably practicable after filing these reports with the SEC or otherwise furnishing it to the SEC. The contents of our website is not incorporated by reference into this Annual Report on Form 10-K or in any other report or document we file with the SEC, and any references to our website is intended to be an inactive textual references only.

Item 1A. Risk Factors

Investing in our securities involves risks. If any of these risks actually occur, it may materially harm our business, financial condition, liquidity and results of operations. As a result, the market price of our securities could decline, and you could lose all or part of your investment. Additionally, the risks and uncertainties described in this Annual Report on Form 10-K are not the only risks and uncertainties that we face. 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, prospects, financial condition or operating results. The following discussion should be read in conjunction with our financial statements and notes to our financial statements included herein, as well as the other documents that we file with the Securities and Exchange Commission.

Risks Related to Our Business and Industry

We have a history of generating net losses, and if we are unable to achieve adequate revenue growth while our expenses increase, we may not achieve or maintain profitability in the future or have sufficient cash to fund our future operations.

We have a history of incurring net losses, and we may not achieve or maintain profitability in the future. We experienced net losses of $1.0 million and $7.0 million for the years ended December 31, 2023 and 2022, respectively. As of December 31, 2023, we had an accumulated deficit of $75.8 million. In the second half of 2023, we also experienced higher operating losses than in previous quarters, primarily as a result of higher channel inventories, order cancellations and a slowdown in the macroeconomic environment. As a result, we cannot accurately predict when or whether we will reach or maintain profitability. We expect our costs will increase over time and our losses to continue as we expect to continue to invest significant additional funds in expanding our business, sales, and marketing activities, and research and development as we continue to develop our products and services, and maintain high levels of customer support, each of which we consider critical to our continued success. We also expect to incur additional general and administrative expenses as we continue to support our operations as a public company. Historically, our costs have increased over the years due to these factors, and we expect to continue to incur increasing costs to support our anticipated future growth. If we are unable to generate adequate revenue growth and manage our expenses, we may continue to incur significant losses and may not achieve or maintain profitability or have sufficient cash to fund our future operations.

Given the challenging macroeconomic conditions outlined above, the Company has taken measures to preserve liquidity, including the strategic decision to restructure our operations and reduce our workforce by 15% in December 2023. The Company closely monitors these conditions and may need to reduce operational expenditures further.

We may also make decisions that could adversely affect our short-term operating results if we believe those decisions improve the experiences of our customers and if we believe such decisions will improve our operating results over the long term. Our decisions may not be consistent with the expectations of investors and may not produce the short-term or long-term benefits that we expect, in which case our business may be materially and adversely affected.

The rapidly evolving and competitive nature of the solar industry makes it difficult to evaluate our future prospects. Our entry into other adjacent markets is new and highly competitive and it is difficult to evaluate our future in these new markets as well.

The rapidly evolving and competitive nature of the solar industry makes it difficult to evaluate our current business and future prospects. In addition, we have limited insight into emerging trends that may adversely affect our business, financial condition, results of operations and prospects. The future energy management services that we intend to offer are new to us and these are highly competitive markets in which we will need to compete. We have encountered and will continue to encounter risks and difficulties frequently experienced by growing companies in rapidly changing industries, including unpredictable and volatile revenues and increased expenses as we continue to grow our business. The viability and demand for our products may be affected by many factors outside of our control, including, but not limited to:

- cost competitiveness, reliability and performance of our solar systems compared to conventional and non-solar renewable energy sources and products;
- competing new technologies at more competitive prices than those we offer for our products;
- availability and amount of government subsidies and incentives to support the development and deployment of solar energy solution systems;
- the extent to which the electric power industry and broader energy industries are deregulated to permit broader adoption of solar electricity generation;
- prices of traditional carbon-based energy sources;
- levels of investment by end-users of solar energy products, which tend to decrease when economic growth slows; and
- the emergence, continuance or success of, or increased government support for, other alternative energy generation technologies and products.

Macroeconomic conditions in our domestic and international markets, as well as inflation concerns, instability of financial institutions, rising interest rates, and recessionary concerns may adversely affect our industry, business and financial results.

Our business depends on the overall demand for our solar energy hardware and software solutions and on the economic health and willingness of our customers and potential customers to make capital commitments to purchase our products and services. As a result of macroeconomic or market uncertainty, including inflation concerns, rising interest rates, recessionary concerns, geopolitical conflicts, and higher inventory channels customers may decide to delay purchasing our products and services or not purchase at all. In addition, a number of the risks associated with our business, which are disclosed in these risk factors, may increase in likelihood, magnitude or duration, and we may face new risks that we have not yet identified.

In the past, unfavorable global macroeconomic and market conditions, including higher interest rates and inflation, have resulted in sustained periods of decreased demand. For example, starting in the second quarter of 2023 and continuing throughout the year, we experienced a significant decline in sales activity compared to the first half of 2023 due to an industry-wide inventory oversupply, higher interest rates and governmental changes to net metering programs in the U.S. and Europe. In addition, macroeconomic and market conditions could be adversely affected by a variety of political, economic or other factors in the U.S. and international markets, which could, in turn, adversely affect spending levels of installers and end users and could create volatility or deteriorating conditions in the markets in which we operate. Macroeconomic uncertainty or weakness could result in:

- reduced demand for our products as a result of constraints on capital spending for residential solar energy systems by our customers;
- increased price competition for our products that may adversely affect revenue, gross margin and profitability;
- decreased ability to forecast operating results and make decisions about budgeting, planning and future investments;
- business and financial difficulties faced by our suppliers or other partners, including impacts to material costs, sales, liquidity levels, ability to continue investing in their businesses, ability to import or export goods, ability to meet development commitments and manufacturing capability; and
- increased overhead and production costs as a percentage of revenue.

Reductions in customer spending in response to unfavorable or uncertain macroeconomic and market conditions, globally or in a particular region where we operate, have adversely affected, and could continue to adversely affect, our business, results of operations and financial condition.

Developments in alternative technologies or improvements in distributed solar energy generation may have a material adverse effect on demand for our products.

Significant developments in alternative technologies, such as advances in other forms of distributed solar PV power generation, storage solutions (such as batteries), the widespread use or adoption of fuel cells for residential or commercial properties or improvements in other forms of centralized power production, may have a material adverse effect on our business and prospects. Any failure by us to adopt new or enhanced technologies or processes, or to react to changes in existing technologies, could result in product obsolescence, the loss of competitiveness of our products, decreased revenue and a loss of market share to competitors.

The solar industry has historically been cyclical and experienced periodic downturns, including the current downturn.

Our future success partly depends on continued demand for solar PV systems in the end-markets we serve, including residential, commercial and utility sectors across the world. The solar industry has historically been cyclical and is currently experiencing a downturn which has affected the demand for our products. Challenging business conditions, mainly as a result of overproduction, higher interest rates, and reductions in applicable governmental subsidies, have also contributed to demand decreases. For example, during the second part of 2023, the solar industry began to experience a downturn, particularly in Europe, which led to a large amount of requests to cancel or delay orders and the buildup of significant backlog of our products. The cancellation or deferral of product orders, or overproduction due to a change in anticipated order volumes could result in us holding excess or obsolete inventory, which could result in inventory write-downs and, in turn, could have a material adverse effect on our financial condition. Therefore, the solar industry may suffer significant or sustained downturns now or in the future, which has in the past and could in the future adversely affect demand for our solar products and our results of operations.

Defects or performance problems in our products or delays, disruptions, or quality control problems in our manufacturing operations could result in loss of customers, reputational damage, and decreased revenue, and we may face warranty, indemnity, and product liability claims arising from defective products. If any energy storage systems procured from original equipment manufacturer ("OEM") suppliers and provided to our customers contain manufacturing defects, our business and financial results could be adversely affected.

Although our products meet our stringent quality requirements, they may contain undetected errors or defects, especially when first introduced or when new generations are released. Errors, defects, or poor performance can arise due to design flaws, defects in raw materials or components or manufacturing difficulties, which can affect both the quality and the yield of the product. Any actual or perceived errors, defects, or poor performance in our products could result in the replacement or recall of our products, or components thereof, shipment delays, rejection of our products, damage to our reputation, lost revenue, diversion of our personnel from our product development efforts, and increases in customer service and support costs, all of which could have a material adverse effect on our business, financial condition, results of operations and prospects. A product recall of a competitor's product may also result in negative publicity towards the market we operate in and damage our brand.

Furthermore, defective components may give rise to warranty, indemnity, or product liability claims against us that exceed any revenue or profit we receive from the affected products. Our failure to accurately predict future claims could result in unexpected volatility in, and have a material adverse effect on, our financial condition. We have in the past, and may in the future, be exposed to product liability claims, if one of our products were to cause injury to someone or cause property damage. We could incur significant costs and liabilities if we are sued and if damages are awarded against us. Further, any product liability claim we face could be expensive to defend and could divert management's attention. The successful assertion of a product liability claim against us could result in potentially significant monetary damages, penalties or fines, subject us to adverse publicity, damage our reputation and competitive position, and adversely affect sales of our products. In addition, product liability claims, injuries, defects, or other problems experienced by other companies in the residential solar industry could lead to unfavorable market conditions for the industry as a whole.

Depending on the product, we offer a 5-to-25-year limited warranty for our products covering defects in design, materials, workmanship, and manufacturing of our products under proper use and service conditions. Therefore, we bear the risk of warranty claims long after we have sold products and recognized revenue. While we do have accrued reserves for warranty claims, our estimated warranty costs for previously sold products may change to the extent future products are not compatible with earlier generation products under warranty. Our warranty accruals are based on our assumptions, and we do not have a long history of making such assumptions. As a result, these assumptions could prove to be materially different from the actual performance of our systems, causing us to incur substantial unanticipated expenses to repair or replace defective products in the future or to compensate customers for defective products.

Our business has been and could continue to be affected by seasonal trends and construction cycles.

We have been and could continue to be subject to industry-specific seasonal fluctuations. Historically, the majority of our revenues are from the European and North American regions which experience higher sales of our products in the second and third quarters and have been affected by seasonal customer demand trends, including weather patterns and construction cycles. The first and fourth quarters historically have had softer customer demand in our industry, due to these same factors. In addition, construction levels of new solar PV projects, which create demand for our products, are typically slower in colder and wetter months. In European countries with Feed-in-Tariffs (FiTs), the construction of solar PV systems requiring our products may be concentrated during the second half of the calendar year, largely due to the annual reduction of the applicable minimum FiT and the fact that the coldest winter months are January through March. Accordingly, our business and quarterly results of operations could be affected by seasonal fluctuations in the future.

We depend upon a small number of outside contract manufacturers, and our business and operations could be disrupted if we encounter problems with these contract manufacturers.

We heavily rely upon our contract manufacturers to manufacture most of our products. We mainly rely on two contract manufacturers. Any change in our relationship or contractual terms with our contract manufacturers, or changes in our contract manufacturers' ability to comply with their contractual obligations could adversely affect our financial condition and results of operations. Our reliance on a small number of contract manufacturers makes us vulnerable to possible capacity constraints and reduced control over component availability, delivery schedules, manufacturing yields and costs. In addition, we will remain heavily dependent on suppliers of the components needed for our manufacturing.

The revenues that our contract manufacturers generate from our orders represent a relatively small percentage of their overall revenues. As a result, fulfilling our orders may not be considered a priority in the event of constrained ability to fulfill all of their customer obligations in a timely manner. In addition, the facilities in which our products are manufactured are located outside of the U.S., currently in Thailand and China. The location of these facilities outside of key markets such as the U.S. increases shipping time, thereby causing a long lead time between manufacturing and delivery.

If our contract manufacturers were unable or unwilling to manufacture our products in required volumes and at high quality levels or renew existing terms under supply agreements, we would have to identify, qualify, and select acceptable alternative contract manufacturers, which may not be available to us when needed or may not be in a position to satisfy our quality or production requirements on commercially reasonable terms. Any significant interruption in manufacturing would require us to reduce our supply of products to our customers or increase our shipping costs to make up for delays in manufacturing, which in turn could reduce our revenues, harm our relationships with our customers, subject us to liquidated damages for late deliveries, and damage our reputation with local installers and potential end-users, all of which will cause us to forego potential revenue opportunities. Further, the ramp of a new contract manufacturer is time-consuming and draining on the resources of our operations team.

We rely primarily on distributors and installers of solar financing to assist in selling our products to customers, and the failure of these providers to perform at the expected level, or at all, could have an adverse effect on our business, financial condition and results of our operations.

During the years ended December 31, 2023 and 2022, our largest customer accounted for approximately 7.4% and 10.6%, respectively, of our annual net revenue for such period. Our customers' decisions to purchase our products are influenced by a number of factors outside of our control. The agreements we have with some of our largest customers do not have long-term purchase commitments. While we do not believe we are dependent on any one individual customer in the long-term, the loss of, or events affecting, one or more of these customers could have a material adverse effect on our business, financial condition, and results of operations.

In addition, we do not have exclusive arrangements with our third-party distributors. Many of our distributors also market and sell products from our competitors. These distributors may terminate their relationships with us at any time and with little or no notice. Further, these distributors may fail to devote the resources necessary to sell our products at the prices, in the volumes, and within the time frames that we expect, or may focus their marketing and sales efforts on products of our competitors. Termination of agreements with current distributors, failure by these distributors to perform as expected, or failure by us to cultivate new distributor relationships, could hinder our ability to expand our operations and harm our revenue and results of operations.

We anticipate a significant portion of our future sales will come from residential solar energy system customers. If our expectations do not materialize, our revenue, financial condition and business could be adversely affected.

We anticipate a significant portion of our revenue growth will be driven by residential solar energy system customers from offerings of our GO ESS product line. If our expectations do not materialize, or if we lose key residential solar energy system customers, or if key residential solar energy system customers reduce or stop placing orders for our high-volume products, our financial results could be adversely affected. Significant reductions in sales to this customer, or any other large, direct customers, or a general decrease in demand for our products within a short period of time could require us to write down inventory or otherwise adversely affect our revenue, financial condition, and business.

The loss of, or events affecting, one or more of our major customers could reduce our sales and have an adverse effect on our business, financial condition and results of operations.

Our customers' decisions to purchase our products are influenced by a number of factors outside of our control, including retail energy prices and government regulation and incentives, among others. Although we have agreements with some of our largest customers, these agreements generally do not have long-term purchase commitments and are generally terminable by either party by providing written notice ahead of an annual renewal. In addition, these customers may decide to no longer use, or to reduce the use of, our products and services for other reasons that may be out of our control. We may also be affected by events impacting our large customers that result in their decreasing their orders with us or impairing their ability to pay for our products. The loss of, or events affecting, one or more of our large customers has had from time to time and could in the future have a material adverse effect on our business, financial condition and results of operations.

Our products may not achieve broader market acceptance, which would prevent us from increasing our revenue and market share.

If we fail to achieve broader market acceptance of our products, there would be an adverse impact on our ability to increase our revenue, and gain market share. Our ability to achieve broader market acceptance for our products will be impacted by a number of factors, including:

- our ability to produce products that compete favorably against other solutions on the basis of price, quality, reliability and performance;

- our ability to timely introduce and complete new designs and timely qualify and certify our products;
- whether installers, system owners and solar financing providers will continue to adopt our systems, which have a relatively limited history with respect to reliability and performance;
- whether installers, system owners and solar financing providers will adopt our storage solution, which is a relatively new technology with a limited history with respect to reliability and performance;
- the ability of prospective system owners to obtain long-term financing for solar PV installations based on our product platform on acceptable terms or at all;
- our ability to develop products that comply with local standards and regulatory requirements, as well as potential in-country manufacturing requirements; and
- our ability to develop and maintain successful relationships with our customers and suppliers.

In addition, our ability to achieve increased market share will depend on our ability to increase sales to established solar installers, who have traditionally sold central or string inverters, or who currently sell competing DC-to-DC optimizers and energy storage systems. These installers often have made substantial investments in design, installation resources and training in traditional central or string inverter systems, DC optimizers, or energy storage systems, which may create challenges for us to achieve their adoption of our solutions.

Mergers in the solar industry among our current or potential customers may adversely affect our competitive position.

There has been an increase in consolidation activity among distributors, large installers, and other strategic partners in the solar industry. For example, in October 2020, Sunrun, a leading provider of residential solar, battery storage and energy services, acquired Vivint Solar. In addition, in December 2021, Stem Inc., a storage software and services company acquired AlsoEnergy, a solar asset management software company. If this consolidation continues, it will further increase our reliance on a small number of customers for a significant portion of our sales and may negatively impact our competitive position in the solar market.

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

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. We also may from time to time engage in acquisitions of businesses or product lines with the potential to strengthen and expand our market position, our technological capabilities, or provide synergy opportunities. For example, we intend to continue to introduce new products targeted at large commercial and utility-scale installations and to continue to expand into other international markets.

Our success operating in these new markets will depend on a number of factors, including our ability to develop solutions to address the requirements of residential and utility-scale solar PV markets, timely certification of new products, our ability to manage increased manufacturing capacity and production, and to identify and integrate any acquired businesses.

Further, we expect these new solar PV markets and the additional markets we have entered, or may enter, to 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 include differing regulatory requirements, including tax laws, trade laws, 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 risks, such as fluctuations in the value of foreign currencies and difficulties and increased expenses in complying with U.S. and foreign laws, regulations and trade standards, including the Foreign Corrupt Practices Act of 1977, as amended.

Failure to develop and introduce these new products successfully, 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.

We anticipate a significant increase in revenue from our GO ESS solution. Revenue from the GO ESS product line will partially depend on our ability to educate existing and potential customers on the benefits of our GO ESS product line. Should a market fail to develop for our GO ESS product line, our actual operating results may differ materially from the forecasted results.

Our future success depends, in part, on the commercial acceptance of our GO ESS product line. The market for our GO ESS product line is relatively new and rapidly evolving. If we are unable to educate our existing and potential customers about the advantages of our GO ESS product line over competing products, our ability to sell our GO ESS product line will be limited. In addition, the energy storage market is rapidly evolving and, therefore, it is difficult to accurately assess the size of the addressable market and we may have limited insight into trends that may emerge and affect our business, results of operations or financial condition. If the market for our demand response solutions and GO ESS product line does not continue to develop, or if we do not keep up with market trends, our ability to grow our business could be limited and we may not be able to operate profitably.

Our success in marketing and selling our products depend, in part, upon our ability to continue to work closely with leading solar manufacturers.

We continue to work on variants of our integrated solar systems that are compatible with all major module manufacturers. The market success of such integrated solar PV solutions and future product offerings will depend in part on our ability to continue to work closely with major solar module manufacturers to ensure our products remain compatible with their designs and products going forward. We may not be able to encourage solar module manufacturers to work with us on the development of such compatible solutions for a variety of reasons, including differences in marketing or selling strategy, competitive considerations, lack of competitive pricing and technological compatibility. In addition, our ability to form effective partnerships with solar module manufacturers may be adversely affected by the substantial challenges faced by many of these manufacturers due to declining prices and revenues from sales of solar modules and the tariffs in the U.S.

We have in the past, and may in the future, face product liability lawsuits which, regardless of outcome, can be expensive to defend, divert the attention of management, and lead to reputational harm.

Solar power systems have the capacity to produce high electric voltages. The component parts in such systems may experience a breakdown of continuity or breakdown of insulation, which can generate sustained electrical arcs. Electrical arcs as well as other potential electrical faults may create a risk of thermal events, damage, or injury to installers and other personnel. We have in the past, and may in the future, face product liability lawsuits and adverse publicity as a result of thermal events, which may cause reputational damage, divert the attention of management or adversely affect our financial condition.

If we fail to retain our key personnel or if we fail to attract additional qualified personnel, we may not be able to achieve our anticipated level of growth and our business could suffer.

We believe that our success and our ability to reach our strategic objectives are highly dependent on the contributions of our key management, technical, engineering and sales personnel. The loss of the services of any of our key employees could disrupt our operations, delay the development and introduction of our hardware and software-enabled services, and negatively impact our business, financial condition and operating results. In particular, we are highly dependent on the services of our Chief Executive Officer and Chairman, as he possesses technical knowledge of our business, operations, and strategy. If we lose his services or if he decides to join a competitor or otherwise compete directly or indirectly with us, our business, operating results and financial condition could be materially harmed. We also depend on the skills and knowledge of our Chief Financial Officer, Vice President of Hardware R&D and Vice President of Software R&D. We cannot assure you that we will be able to successfully attract and retain the senior leadership necessary to grow our business. Furthermore, there is increasing competition for talented individuals in our field, and competition for qualified personnel is especially intense in the San Francisco Bay Area, where our principal offices are located.

All of our employees, including our senior management, are free to terminate their employment relationships with us at any time. Competition for highly skilled executives and employees in the technology industry is intense, and our competitors have targeted individuals in our organization that have desired skills and experience. If we are not able to continue to attract, train and retain our leadership team and our qualified employees necessary for our business, the progress of our product development programs could be hindered, and we could be materially adversely affected. To help attract, retain and motivate our executives and qualified employees, we use stock-based incentive awards, including restricted stock units. The recent decline in our stock price and our cost reduction initiatives may adversely affect our ability to attract and retain highly qualified personnel, and we may experience increased attrition or we may need to provide additional cash or equity compensation to retain employees. In addition, if the value of such stock awards does not appreciate as measured by the performance of the price of our common stock, or if our share-based compensation otherwise ceases to be viewed as a valuable benefit, our ability to attract, retain and motivate our executives and employees could be weakened, which could harm our business and results of operations. Also, if the value of our stock awards increases substantially, this could potentially create substantial personal wealth for our executives and employees and affect our ability to retain our personnel. In addition, any future restructuring plans may adversely impact our ability to attract and retain key employees.

Any failure by management to properly manage growth could have a material adverse effect on our business, operating results and financial condition.

Our business has experienced growth in the past several years. To the extent we continue to experience significant growth in the future, it could place significant demands on our management, operations, systems, accounting, internal controls and financial resources, and it may also negatively impact our ability to retain key personnel. If we experience difficulties in any of these or other areas, we may not be able to expand our business successfully or effectively manage our growth. Any failure by management to manage our growth and to respond to changes in our business could have a material adverse effect on our business, financial condition and results of operations.

We may not realize the anticipated benefits of past or future acquisitions, including our recent acquisition of Foresight Energy Ltd. ("fSight"), and the integration of fSight or other acquired businesses may disrupt our business and management, which could adversely affect our business, operating results and financial condition.

On January 25, 2023, we acquired all the issued and outstanding share capital of fSight, a software company organized under the laws of the state of Israel. We may not realize the anticipated benefits of our acquisition of fSight, or such other acquisitions, and we may encounter substantial difficulties, costs and delays involved in integrating such businesses into our operations, including exposure to unknown liabilities, failure to maximize our financial and strategic position, failure to achieve planned synergies or expected financial results benefits and failure to realize the potential of fSight's technologies or properly obtain or secure protection of intellectual property rights. Ultimately, there can be no assurance that we will successfully integrate our acquisition of fSight, or any future acquisition and we may not realize the benefits of such acquisitions to the extent anticipated, which could adversely affect our business, operating results and financial condition.

Risks Related to Legal, Compliance and Regulations

The reduction, elimination or expiration of government subsidies and economic incentives for on-grid solar electricity applications could reduce demand for solar PV systems and harm our business.

Given our dynamic customer makeup across the world, we and our customers are subject to governmental policies applicable to renewable energy development in numerous jurisdictions.

The market for on-grid applications, where solar power, on a standalone basis or paired with energy storage systems, is used to supplement a customer's electricity purchased from the utility network or sold to a utility under tariff, depends in large part on the availability and size of government and economic incentives that vary by geographic market. Because our customers' sales of solar power are typically into the on-grid market, the reduction, elimination or expiration of government subsidies and economic incentives for on-grid solar electricity may negatively affect the competitiveness of solar electricity relative to conventional and non-solar renewable sources of electricity and could harm or halt the growth of the solar electricity industry and our business.

National, state and local government bodies in many countries, including the United States, have provided incentives in the form of feed-in tariffs ("FiTs"), rebates, tax credits and other incentives to system owners, distributors, system integrators and manufacturers of solar PV systems and battery energy storage systems to bolster the cost competitiveness of solar electricity in on-grid applications relative to the cost of utility power, and to reduce dependency on other forms of energy. Many of these government incentives expire, phase out over time, terminate upon the exhaustion of the allocated funding, require renewal by the applicable authority or are being changed by governments due to changing market circumstances or changes to national, state or local energy policy.

Electric utility companies or generators of electricity from other non-solar renewable sources of electricity may successfully lobby for changes in the relevant legislation in their markets that are harmful to the solar industry. Reductions in, or eliminations or expirations of, governmental incentives in regions where we focus our sales efforts could result in decreased demand for and lower revenue from solar PV systems there, which would adversely affect sales of our products. In addition, our ability to successfully penetrate new geographic markets may depend on new countries adopting and maintaining incentives to promote solar electricity, to the extent such incentives are not currently in place. Furthermore, electric utility companies may establish pricing structures or interconnection requirements that could adversely affect our sales and be harmful to the solar and distributed rooftop solar generation industry.

Among other government-established incentives, net energy metering and related policies have supported the growth of on-grid solar products, and changes to such policies may reduce demand for electricity from our solar service offerings. Net energy metering is a utility rate program that requires a consumer's electric company to purchase the excess solar energy that the consumer's solar panels produce and pay the retail rate for electricity exported to the grid, less certain non-bypassable fees paid by the consumer. For example, in 2016, the CPUC issued an order retaining retail rate-based net energy metering credits for residential customers of California's major utilities as part of NEM 2.0. Customers under NEM 2.0 were made subject to interconnection application fees and must take service under time-of-use rates with different electricity prices during peak and off-peak hours. Existing customers who receive service under the prior net energy metering program, as well as new customers under the NEM 2.0 program, remain eligible for the NEM 2.0 program for a period of 20 years. However, on December 15, 2022, the CPUC adopted a "NEM 3.0" policy, also known as the Net Billing Tariff, that unbundles export compensation from retail rates and instead bases it on a tool called the Avoided Cost Calculator ("ACC"), which estimates the hourly utility costs that are avoided by exports from distributed generation. The CPUC did seek to ease the transition for the solar market by adopting export "adders" to the hourly ACC values for the first several years of the tariff. Nevertheless, these ACC-based export compensation values are significantly lower than retail rates for most hours of the year and may therefore increase payback periods, and thereby reduce demand, for solar-only systems. Similarly, in November 2023, the CPUC adopted changes to its Virtual NEM and NEM Aggregation programs that prohibit the netting of import energy charges at multi-meter commercial or agricultural properties with solar energy generated at or adjacent to those properties, except for residential account holders in a multi-family residential property. These types of modifications to net energy metering incentives have impacted and could further harm our business, both in California, where we have derived a significant portion of historical revenues in the United States, and in other jurisdictions, if pursued there.

On August 16, 2022, President Biden signed into law the Inflation Reduction Act of 2022, which among other things, extended the 30% investment tax credit for installations of solar systems through the end of 2032, reduced to 26% for 2033, 22% for 2034 and 0% thereafter. These tax credits could be reduced or eliminated as part of future U.S. tax legislation, changes or regulatory reform initiatives by the current Congress or the new presidential administration. The reduction in the investment tax credit could reduce the demand for solar system solutions in the U.S. which would have an adverse impact on our business, financial condition and results of operations.

Federal, state, local and foreign tax credits, grants and other incentive programs have had a positive effect on our sales since inception. However, unless these programs are further extended or modified to allow for continued growth in the residential solar market, the phase-out of such programs could adversely affect sales of our products in the future. Reductions in incentives and uncertainty around future energy policy, including local content requirements, have negatively affected and may continue to negatively affect our business, financial condition, and results of operations as we seek to increase our business domestically and abroad. Additionally, as we further expand to other countries, changes in incentive programs or electricity policies could negatively affect returns on our investments in those countries as well as our business, financial condition and results of operations.

Existing electric utility industry regulations, and changes to regulations, may present technical, regulatory, and economic barriers to the purchase and use of solar PV systems that may significantly reduce demand for our products or harm our ability to compete. In addition, determinations of various regulatory bodies regarding lack of compliance with certifications or other regulatory requirements could harm our ability to sell our products in certain countries.

Federal, state, local and foreign government regulations and policies concerning the electric utility industry, and internal policies and regulations promulgated by electric utilities, heavily influence the market for electricity generation products and services. These regulations and policies could deter purchases of solar PV systems sold by our customers, significantly reducing the potential demand for our products. For example, utilities 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 use solar PV systems sold by our customers and make them less desirable, thereby harming our business, prospects, financial condition and results of operations. In addition, depending on the region, electricity generated by solar PV systems competes most effectively with expensive peak-hour electricity from the electric grid, rather than the less expensive average price of electricity. Modifications to the utilities' peak hour pricing policies or rate design, such as to a flat rate, could require the price of solar PV systems and their component parts to be lower in order to compete with the price of electricity from the electric grid.

Changes in current laws or regulations applicable to us or the imposition of new laws and regulations in the U.S., Europe, or other jurisdictions in which we do business could have a material adverse effect on our business, financial condition and results of operations. Any changes to government or internal utility regulations and policies that favor electric utilities could reduce the competitiveness of solar PV systems sold by our customers and cause a significant reduction in demand for our products and services. In addition, changes in our products or changes in export and import laws and implementing regulations may create delays in the introduction of new products in international markets, prevent our customers from deploying our products internationally or, in some cases, prevent the export or import of our products to certain countries altogether. Any such event could have a material adverse effect on our business, financial condition, and results of operations.

Compliance with various regulatory requirements and standards is a prerequisite for placing our products on the market in most countries in which we do business. We have all such certifications but there are at times challenges by local administrative telecommunications, consumer board or other authorities that can place sales bans on products. We maintain our position that all of our current products are tested, approved and compliant with relevant regulations, any adverse ruling can have a negative impact on our business and reputation.

Our management has limited experience in operating a public company. The requirements of being a public company may strain our resources and divert management's attention, and the increases in legal, accounting and compliance expenses resulting from being a public company may be greater than we anticipate.

Our management team, including our executive officers, has limited experience in the management of a publicly traded company. Our management team has limited experience in dealing with the increasingly complex laws pertaining to public companies, which could be a significant disadvantage in that an increasing amount of their time has been and will continue to be devoted to these activities which will result in less time being devoted to the management and growth of the Company. Although we have hired additional accounting personnel since becoming a public company, we may not have adequate personnel with the appropriate level of knowledge, experience and training in the accounting policies, practices or internal control over financial reporting required of public companies in the U.S. The implementation of the standards and controls necessary for us to maintain the level of accounting standards required of a public company in the U.S. may require costs greater than expected. We may be required to expand our employee base and hire additional employees to support our operations as a public company, which would increase our operating costs in future periods.

The installation and operation of our energy storage systems are subject to environmental laws and regulations in various jurisdictions, and there is uncertainty with respect to the interpretation of certain environmental laws and regulations to our energy storage systems, especially as these regulations evolve over time.

We are subject to national, state and local environmental laws and regulations, as well as environmental laws in those foreign jurisdictions in which we operate. Environmental laws and regulations can be complex and may change often. These laws can give rise to liability for administrative oversight costs, cleanup costs, property damage, bodily injury, fines and penalties. We are committed to compliance with applicable environmental laws and regulations, including health and safety standards, and we continually review the operation of our energy storage systems for health, safety and compliance. Our energy storage systems, like other battery technology-based products of which we are aware, produce small amounts of hazardous wastes and air pollutants, and we seek to ensure that they are handled in accordance with applicable regulatory standards.

Maintaining compliance with laws and regulations can be challenging given the changing patchwork of environmental laws and regulations that prevail at the U.S. federal, state, regional and local level and in foreign countries in which we operate. Most existing environmental laws and regulations preceded the introduction of battery technology and were adopted to apply to technologies existing at the time, namely large, coal, oil or gas-fired power plants. Currently, there is generally little guidance from these agencies on how certain environmental laws and regulations may, or may not, be applied to our technology.

In many instances, our technology is moving faster than the development of applicable regulatory frameworks. It is possible that regulators could delay or prevent us from conducting our business in some way pending agreement on, and compliance with, shifting regulatory requirements. Such actions could delay the sale to and installation by customers of energy storage systems, result in fines, require their modification or replacement, or trigger claims of performance warranties and defaults under customer contracts that could require us to refund hardware or service contract payments, any of which could adversely affect our business, financial performance and reputation.

We are subject to risks related to corporate social responsibility.

We are facing increasing scrutiny related to our environmental, social and governance (“ESG”) practices and requested disclosures by institutional and individual investors who are increasingly using ESG screening criteria in making investment decisions. Our disclosures on these matters or a failure to satisfy evolving stakeholder expectations for ESG practices and reporting may potentially harm our reputation and impact relationships with investors. Certain market participants, including major institutional investors, use third-party benchmarks or scores to measure our ESG practices in making investment decisions. Furthermore, some of our customers and suppliers evaluate our ESG practices or request that we adopt certain ESG policies as a condition of awarding contracts. In addition, our failure or perceived failure to pursue or fulfill our goals, targets and objectives or to satisfy various reporting standards within the timelines we announce, or at all, could expose us to government enforced actions and/or private litigation. As ESG best practices, reporting standards and disclosure requirements continue to develop, we may incur increasing costs related to ESG monitoring and reporting.

Our significant international operations subject us to additional risks that could adversely affect our business, results of operations and financial condition.

We have significant international operations, and we are continuing to expand our international operations as part of our growth strategy. Our current international operations and our plans to expand our international operations have placed, and will continue to place, a strain on our employees, management systems and other resources.

Our international operations may fail to succeed due to risks inherent in operating businesses internationally, such as:

- our lack of familiarity with commercial and social norms and customs in countries which may adversely affect our ability to recruit, retain and manage employees in these countries;
- difficulties and costs associated with staffing and managing foreign operations;
- the potential diversion of management’s attention to oversee and direct operations that are geographically distant from our U.S. headquarters;
- compliance with multiple, conflicting and changing governmental laws and regulations, including employment, tax, privacy and data protection laws and regulations;
- legal systems in which our ability to enforce and protect our rights may be different or less effective than in the United States and in which the ultimate result of dispute resolution is more difficult to predict;

- higher employee costs and difficulty in terminating non-performing employees;
- differences in workplace cultures;
- unexpected changes in regulatory requirements;
- tariffs, export controls and other non-tariff barriers such as quotas and local content rules;
- more limited protection for intellectual property rights in some countries;
- adverse tax consequences, including as a result of transfer pricing adjustments involving our foreign operations;
- fluctuations in currency exchange rates;
- anti-bribery compliance by us or our partners;
- restrictions on the transfer of funds;
- global epidemics, pandemics, or contagious diseases; and
- new and different sources of competition.

Our failure to manage any of these risks successfully could harm our existing and future international operations and seriously impair our overall business.

Our business could be adversely affected by trade tariffs or other trade barriers.

In recent years, China and the U.S. have each imposed tariffs, and there remains a potential for further trade barriers. These barriers may escalate into a trade war between China and the U.S. Tariffs could potentially impact our hardware component prices and impact any plans to sell products in China and other international markets. In addition, these developments could have a material adverse effect on global economic conditions and the stability of global financial markets. Any of these factors could have a material adverse effect on our business, financial condition and results of operations.

Current or future litigation or administrative proceedings could have a material adverse effect on our business, financial condition and results of operations.

We have been and continue to be involved in legal proceedings, administrative proceedings, claims and other litigation that arise in the ordinary course of business. In addition, since our energy storage system is a new type of product in a nascent market, we have in the past needed and may in the future need to seek the amendment of existing regulations or, in some cases, the creation of new regulations, in order to operate our business in some jurisdictions. Such regulatory processes may require public hearings concerning our business, which could expose us to subsequent litigation. Unfavorable outcomes or developments relating to proceedings to which we are a party or transactions involving our products, such as judgments for monetary damages, injunctions, or denial or revocation of permits, could have a material adverse effect on our business, financial condition, and results of operations. Any inability to enforce our patents against our competitors or any finding that our patents are invalid, including in our current litigation or administrative proceedings, could have a materially adverse effect on our business, financial condition, or results of operations. In addition, settlement of claims could adversely affect our financial condition and results of operations.

Changes in U.S. and foreign tax laws could have a material adverse effect on our business, cash flow, results of operations or financial conditions.

The tax regimes we are subject to or operate under, including income and non-income taxes, are unsettled and may be subject to significant change. Changes in tax laws, regulations, or rulings, or changes in interpretations of existing laws and regulations, could materially affect our financial position and results of operations. For example, the 2017 Tax Cuts and Jobs Act, or Tax Act, made broad and complex changes to the U.S. tax code, including changes to U.S. federal tax rates, additional limitations on the deductibility of interest, both positive and negative changes to the utilization of future NOL carryforwards, and allowing for the expensing of certain capital expenditures. The 2020 Coronavirus Aid, Relief, and Economic Security Act, or CARES Act, modified certain provisions of the Tax Act. In addition, on August 16, 2022, the IRA, among other provisions, imposes a 15% minimum tax on the adjusted financial statement income of certain large corporations and a 1% excise tax on corporate stock repurchases by U.S. publicly traded corporations and certain U.S. subsidiaries of non-U.S. publicly traded corporations, as well as significant enhancements of U.S. tax incentives relating to climate and energy investments. The exact impact of the Tax Act, the CARES Act and the IRA for future years is difficult to quantify, but these changes could materially affect our effective tax rate in future periods, in addition to any changes made by new tax legislation.

The Organization for Economic Co-operation and Development (the "OECD")/G20 Inclusive Framework on Base Erosion and Profit Shifting has a two-pillar approach to address tax challenges arising from the digitalization of the global economy by (i) allocating profits to market jurisdictions ("Pillar One") and (ii) ensuring multinational enterprises pay a minimum level of tax regardless of where the headquarters are located or the jurisdictions in which the company operates ("Pillar Two"). Pillar One targets multinational groups with global revenue exceeding €20 billion and a profit-to-revenue ratio of more than 10%. Companies subject to Pillar One will be required to allocate profits and pay taxes to market jurisdictions. Pillar Two focuses on global profit allocation and a global minimum tax rate. In December 2022, the European Union ("EU") Member States formally adopted the EU's Pillar Two Directive, which generally provides for a minimum effective tax rate of 15%, as established by the OECD Pillar Two Framework that was supported by over 130 countries worldwide. The EU Pillar Two Directive became effective on January 1, 2024. Other countries are also actively considering changes to their tax laws to adopt certain parts of the OECD's proposals. Based on the current revenue and profit thresholds, we do not currently expect to be impacted by either Pillar One or Pillar Two, but will continue to monitor and evaluate the potential future impact of both the proposals on our effective tax rate and related impact on our consolidated financial statements and related disclosures. The potential impact of any future rules or regulations to address the tax challenges arising from the digitization of the global economy could have a material adverse effect on our consolidated financial statements.

Significant judgment is required in evaluating our tax positions and our worldwide provision for taxes. During the ordinary course of business, there are many activities and transactions for which the ultimate tax determination is uncertain. As we expand the scale of our business activities, changes to the taxation of our activities could increase our worldwide effective tax rate, increase the amount of taxes imposed on our business, and harm our financial position. We may be audited in various jurisdictions, and such jurisdictions may assess additional taxes against us. Although we believe our tax estimates are reasonable, the final determination of any tax audits or litigation could be materially different from our historical tax provisions and accruals. Any such changes may also apply retroactively to our historical operations and result in taxes greater than the amounts estimated and recorded in our financial statements, which could have a material adverse effect on our operating results or cash flows in the relevant period or periods.

Natural disasters, public health events, significant disruptions of information technology systems, data security breaches, or other catastrophic events could adversely affect our operations.

Our worldwide operations could be subject to natural disasters (including as a result of climate change), public health events, significant disruptions of information technology systems, data security breaches and other catastrophic business disruptions, which could harm our future revenue and financial condition and increase our costs and expenses. We rely on third-party manufacturing facilities, including for all product assembly and final testing of our products, which are performed at third-party manufacturing facilities in China and Thailand. There may be conflict or uncertainty in the countries in which we operate, including public health issues (for example, the COVID-19 pandemic or an outbreak of other contagious diseases or health epidemics), safety issues, natural disasters, fire, disruptions of service from utilities, nuclear power plant accidents, regional wars, or general economic or political factors. Such risks could result in an increase in the cost of components, production delays, general business interruptions, delays from difficulties in obtaining export licenses for certain technology, tariffs and other barriers and restrictions, longer payment cycles, increased taxes, restrictions on the repatriation of funds and the burdens of complying with a variety of foreign laws, any of which could ultimately have a material adverse effect on our business.

In the event that natural disasters (including as a result of climate change), public health epidemics or technical catastrophes were to damage or destroy any part of our facilities or those of our contract manufacturer, destroy or disrupt vital infrastructure systems or interrupt our operations or services for any extended period of time, our business, financial condition and results of operations would be materially and adversely affected.

Market Opportunity Risks

The market for our products is highly competitive and we expect to face increased competition as new and existing competitors introduce power optimizers, inverters, solar PV system monitoring and other smart energy products, which could negatively affect our results of operations and market share.

The market for solar PV solutions is highly competitive. We principally compete with traditional inverter manufacturers as well as microinverter manufacturers. Over the past few years, several new entrants to the inverter and MLPE market, including low-cost Asian manufacturers, have announced plans to ship or have already shipped products in markets in which we sell our products, including, with respect to sales in Australia and in Europe. We expect competition to intensify as new and existing competitors enter the market. In addition, there are several new entrants, including ourselves, that are proposing or have proposed solutions to the rapid shutdown functionality which has become a regulatory requirement for PV rooftop solar systems in the United States. Our competitors may offer a more competitive price and technologically attractive solution to the residential solar PV market, which could make it more difficult for us to maintain market share.

Several of our existing and potential competitors have the financial resources to offer competitive products at aggressive or below-market pricing levels, which could cause us to lose sales or market share or cause us to lower prices for our products in order to compete effectively. If we have to reduce our prices by more than we anticipated, or if we are unable to offset any future reductions in our average selling prices by increasing our sales volume, reducing our costs and expenses or introducing new products, our financial condition and results of operations would suffer.

In addition, competitors may be able to develop new products more quickly than us, may partner with other competitors to provide combined technologies and competing solutions and may be able to develop products that are more reliable or that provide more functionality than ours.

A drop in the retail price of electricity derived from the utility grid or from alternative energy sources may harm our business, financial condition, results of operations, and prospects.

Decreases in the retail prices of electricity from the utility grid, or other renewable energy resources, would make the purchase of solar PV systems less economically attractive and would likely lower sales of our products. The price of electricity derived from the utility grid could decrease as a result of:

- construction of a significant number of new power generation plants, including plants utilizing natural gas, nuclear, coal, renewable energy or other generation technologies;
- relief of transmission constraints that enable local centers to generate energy less expensively;
- reductions in the price of natural gas, or alternative energy resources other than solar;
- utility rate adjustment and customer class cost reallocation;
- energy conservation technologies and public initiatives to reduce electricity consumption;
- development of smart-grid technologies that lower the peak energy requirements of a utility generation facility;
- development of new or lower-cost energy storage technologies that have the ability to reduce a customer's average cost of electricity by shifting load to off-peak times; and
- development of new energy generation technologies that provide less expensive energy.

Moreover, technological developments in the solar components industry could allow our competitors and their customers to offer electricity at costs lower than those that can be offered by us and our customers, which could result in reduced demand for our products. If the cost of electricity generated by solar PV installations incorporating our systems is high relative to the cost of electricity from other sources, our business, financial condition and results of operations may be harmed.

Increased interest rates and the tightening of supply of capital in the global financial markets has in the past, and could in the future, make it difficult for end-users to finance the cost of a solar PV system and could reduce the demand for smart energy products and thus demand for our products.

Many end-users depend on financing to fund the initial capital expenditure required to develop, build or purchase a solar PV system. As a result, the current level of increased interest rates and a reduction in the supply of project debt financing or reduced tax equity investments, has in the past, and could in the future, reduce the number of solar projects that receive financing or otherwise make it difficult for our customers or the end-users to secure the financing necessary to develop, build, purchase or install a solar PV system on favorable terms, or at all, and thus lower demand for our products which could limit our growth or reduce our net sales. In addition, we believe that a significant percentage of end-users install solar PV systems as an investment, funding the initial capital expenditure through financing. The increased level of interest lowers such end-users' return on investment on a solar PV system, increases the equity return requirements and could make alternative investments more attractive relative to solar PV systems, and, in each case, could cause such end-users to seek alternative investments.

Our limited operating history at current scale and our nascent industry make evaluating our business and future prospects difficult.

We have a limited history operating our business at its current scale, and therefore a limited history upon which you can base an investment decision. There is rising demand for clean electric power solutions that can provide electric power with lower carbon emissions with high availability. One such solution is distributed, renewable energy generation which is supplementing and replacing conventional generation sources, given its increasingly compelling economics. Among other renewable energy market trends, we expect our business results to be driven by declines in the cost of generation of renewable power (as evidenced by current solar and wind generation deployments), decreases in the cost of manufacturing battery packs and a rapidly growing energy storage market driven by increasing demand from C&I customers, utilities and grid operators. However, predicting our future revenue and appropriately budgeting for our expenses is difficult, and we have limited insight into trends that may emerge and affect our business.

If renewable energy technologies are not suitable for widespread adoption or sufficient demand for our hardware and software-enabled services does not develop or takes longer to develop than we anticipate, our sales and revenue may decline.

The market for renewable, distributed energy generation is emerging and rapidly evolving, and its future success is uncertain. If renewable energy generation proves unsuitable for widespread commercial deployment or if demand for our renewable energy hardware and software-enabled services fails to develop sufficiently, we would be unable to achieve sales and market share.

Many factors may influence the widespread adoption of renewable energy generation and demand for our hardware and software-enabled services, including, but not limited to the cost-effectiveness of renewable energy technologies as compared with conventional and competitive technologies, the performance and reliability of renewable energy products as compared with conventional and non-renewable products, fluctuations in economic and market conditions that impact the viability of conventional and competitive alternative energy sources, increases or decreases in the prices of oil, coal and natural gas, continued deregulation of the electric power industry and broader energy industry, and the availability or effectiveness of government subsidies and incentives.

Events that negatively impact the growth of renewable energy will have a negative impact on our business and financial condition.

The growth and profitability of our business is dependent upon the future growth of renewable energy, such as solar. The solar industry is an evolving industry that has experienced substantial changes in recent years, and we cannot be certain that consumers, businesses, or utilities will adopt solar PV systems as an alternative energy source at levels sufficient to grow our business. If demand for our solar energy hardware and software solutions fails to continue to develop sufficiently, demand for our products will decrease, resulting in an adverse impact on our ability to increase our revenue and grow our business.

The growth of renewable energy, including the number of renewable energy projects is dependent upon a number of factors, including governmental policies, including incentives that encourage the building of renewable energy projects, and the cost of alternative energy sources, including fossil fuels and new technologies. Any events or change in the regulatory framework or electricity energy market that negatively impact the growth and development of renewable energy, particularly wind and solar energy, will have a negative impact on our business and financial condition.

The failure of battery storage cost to continue to decline would have a negative impact on our business and financial condition.

The growth and profitability of our business is dependent upon the continued decline in the cost of battery storage. Over the last decade, the cost of battery storage systems, particularly lithium-ion based battery storage systems, has declined significantly. This lower cost has been driven by advances in battery technology, maturation of the battery supply chain, the scale of battery production by the leading manufacturers and other factors. The growth of our hardware sales and related software-enabled services is dependent upon the continued decrease in the price and efficiency of battery storage systems of our OEM suppliers. If for whatever reason, our OEM suppliers are unable to continue to reduce the price of their battery storage systems, our business and financial condition will be negatively impacted.

Operating Risks

Our operating results may fluctuate significantly as a result of a variety of factors, many of which are outside of our control.

We are subject to, among other things, the following factors that may negatively affect our operating results:

- seasonal and other fluctuations in demand for our products;
- the timing, volume and product mix of sales of our products, which may have different average selling prices or profit margins;
- changes in our pricing and sales policies or the pricing and sales policies of our competitors;
- our ability to design, manufacture and deliver products to our customers in a timely and cost-effective manner and that meet customer requirements;
- our ability to manage our relationships with our contract manufacturers, customers and suppliers;
- quality control or yield problems in our manufacturing operations;
- the anticipation, announcement or introductions of new or enhanced products by our competitors and ourselves;
- reductions in the retail price of electricity;
- changes in laws, regulations and policies applicable to our business and products, particularly those relating to government incentives for solar energy applications;
- the impact of tariffs on the solar industry in general and our products in particular;
- unanticipated increases in costs or expenses;
- the amount and timing of operating costs and capital expenditures related to the maintenance and expansion of our business operations;
- the impact of government-sponsored programs on our customers;
- our exposure to the credit risks of our customers, particularly in light of the fact that some of our customers are relatively new entrants to the solar market without long operating or credit histories;
- our ability to estimate future warranty obligations due to product failure rates, claim rates or replacement costs;
- our ability to forecast our customer demand and manufacturing requirements, and manage our inventory;
- our ability to predict our revenue and plan our expenses appropriately;

- fluctuations in foreign currency exchange rates;
- announcement of acquisitions or dispositions of our assets or business operations;
- changes in our management; and
- general economic conditions and changes in such conditions specific to our target markets.

The above factors are difficult to forecast, and these, as well as other factors, could materially and adversely affect our operating results. Any failure to adjust spending quickly enough to compensate for a revenue shortfall could magnify the adverse impact of this revenue shortfall on our results of operations. There can be no assurance that we will be able to successfully address these risks.

We are exposed to general economic conditions and the fluctuations of interest and inflation rates may have an adverse effect on our business.

We are seeing an increase in overall operating and other costs as the result of higher inflation rates, in particular in Europe and the United States. While we do not believe inflationary pressures have caused a material impact on our business to date, there can be no guarantee that inflation will not cause our operations to suffer in the future. If high inflation rates continue, or if the global or U.S. economies experience a recession or economic slowdown, consumers may not be able to purchase our products as usual, especially where these factors have a direct impact on the consumers. As a consequence, our earnings may be adversely affected. High interest rates in Europe, the U.S., or elsewhere could adversely affect our costs and earnings due to the impact those changes have on our variable-rate debt instruments.

Furthermore, we could be adversely affected by negative economic conditions prevalent in the U.S. or other countries, even when economic conditions in such countries may differ significantly from economic conditions in Europe or elsewhere, as investors' reactions to developments in any of these other countries may have an adverse effect on our securities. Consequently, the market value of our securities may be adversely affected by events taking place outside of Europe or the U.S.

Disruption in our global supply chain and rising prices of oil and raw materials as a result of the conflict between Russia and Ukraine may negatively impact our businesses.

The Russian invasion of Ukraine beginning in late February 2022, and the recent recognition by Russia of the independence of the self-proclaimed republics of Donetsk and Luhansk, in the Donbas region of Ukraine, may significantly amplify already existing disruptions to our supply-chain and logistics. Specifically, the conflict may disrupt the transit of goods by train from China to Europe, result in an increase in prices of certain raw materials sourced in Russia such as nickel and aluminum that are used in the manufacture of products relevant to the solar industry as well as increase oil prices that will in turn cause overall shipping costs to rise. In addition, the governments of the United States, the European Union, Japan and other jurisdictions have recently announced the imposition of sanctions on certain industry sectors and parties in Russia and the regions of Donetsk and Luhansk, as well as enhanced export controls on certain products and industries. These and any additional sanctions, as well as any counter responses by the governments of Russia or other jurisdictions, could adversely affect the global financial markets generally and levels of economic activity as well as increase financial markets volatility. Our compliance with these measures, and any additional measures or sanctions, as well as the resulting rise in prices of certain raw materials sourced in Russia and the prices of oil may disrupt our business and operations, and/or impact the pricing of our products.

As a result of war, hostilities and other conditions in Israel, the Company's business operations could be negatively impacted.

The Company has subsidiaries that conduct research and development, in addition to our Predict+ service, that are located in Israel. Accordingly, political, economic, and military conditions in Israel directly affect us. Israel has been and is currently involved in a number of armed conflicts and is the target of terrorist activity, including threats from Hezbollah militants in Lebanon, Iranian militia in Syria, and others. For example, on October 7, 2023, Hamas terrorists and members of other terrorist organizations conducted a series of attacks on Israeli civilian and military targets. Shortly following the attack, Israel declared war against Hamas, and several hundred thousand Israeli reservists were drafted to perform immediate military service. The intensity and duration of Israel's current war against

Hamas and military conflicts at some of its borders are difficult to predict, as are its economic implications on the Company's business and operations in Israel and on Israel's economy in general.

In addition, any future armed conflict, political instability, event of escalation or violence in the region may impede our ability to manage our business effectively or otherwise adversely affect our business or operations. Some of our employees in Israel are obligated to perform annual reserve duty in the Israeli military and are subject to being called for additional active duty under emergency circumstances, including in connection with the current war against Hamas. In the event that our subsidiary's office is damaged as a result of hostile action, or the current war against Hamas or new hostilities otherwise disrupt the ongoing operation of our office, our ability to operate could be materially adversely affected.

We are dependent on ocean transportation to deliver our products in a timely and cost-efficient manner. If we are unable to use ocean transportation to deliver our products, our business and financial condition could be materially and adversely impacted.

We rely on ocean transportation for the delivery of most of our products to our customers, and when unavailable, incompatible with customer delivery time requirements, or when we are unable to accommodate accelerated delivery times due to growing customer volume demands, we rely on alternative, more expensive air transportation. Our ability to deliver our products via ocean transportation could be adversely impacted by shortages in available cargo capacity, changes by carriers and transportation companies in policies and practices, such as scheduling, pricing, payment terms and frequency of service or increases in the cost of fuel, taxes and labor, disruptions to ports and other shipping facilities due to geopolitical conflicts or pandemics, and other factors not within our control. If we are unable to use ocean transportation and are required to substitute more expensive air transportation, our financial condition and results of operations could be materially and adversely impacted.

Throughout 2022 and into the first quarter of 2023, the Company experienced an increase in the cost of goods sold, driven by higher shipping rates. This rise in shipping rates were primarily due to a reduction in ocean freight capacity, the build-up of containers in the U.S. and Europe that were not returned to Asia, and a decrease in air freight availability, leading to a greater dependence on ocean freight.

During the second and third quarters of 2023, shipping costs moderated as the global supply chain began to normalize. However, in the last quarter of 2023, costs increased again due to geopolitical tensions in the Middle East. Specifically, actions by the Houthi rebel group in Yemen disrupted international shipping lanes in the Red Sea, necessitating the rerouting of commercial ships away from the Suez Canal to longer alternative routes. Additionally, drought conditions in Latin America resulted in restrictions on the number of ships that can pass through the Panama Canal each day. Given these persisting challenges, the Company has continued to experience increased shipping costs. If these specific factors continue, the Company anticipates that shipping rates could remain high, and continue to lead to increased costs of goods sold.

If our estimates of useful life for our solar energy hardware and software solutions are inaccurate or if our OEM suppliers do not meet service and performance warranties and guarantees, our business and financial results could be adversely affected.

We sell hardware and software-enabled services to our customers. Our software-enabled services are essential to the operation of these hardware products. As a result, in connection with the sales of solar energy hardware, we enter into recurring long-term services agreements with customers. Our pricing of services contracts is based upon the value we expect to deliver to our customers, including considerations such as the useful life of the solar energy systems and prevailing electricity prices. We also provide certain warranties and guarantees covering product specification and drawings, as well as defects in design, materials, workmanship, and manufacturing.

We do not have a long history with a large number of field deployments, and our estimates may prove to be incorrect. Failure to meet these performance warranties and guarantee levels may require us to refund our service contract payments to the customer, or require us to make cash payments to the customer based on actual performance, as compared to expected performance.

Further, the occurrence of any defects, errors, disruptions in service, or other performance problems, interruptions, or delays with our solar energy and management systems, whether in connection with day-to-day operations or otherwise, could result in:

- loss of customers;
- loss or delayed market acceptance and sales of our hardware and software-enabled services;
- delays in payment to us by customers;
- injury to our reputation and brand;
- legal claims, including warranty and service level agreement claims, against us; or
- diversion of our resources, including through increased service and warranty expenses or financial concessions, and increased insurance costs.

The costs incurred in correcting any material defects or errors in our hardware and software or other performance problems may be substantial and could adversely affect our business, financial condition and results of operations.

Any failure to offer high-quality technical support services may adversely affect our relationships with our customers and adversely affect our financial results.

Our customers depend on our support organization to resolve any technical issues relating to our hardware and software-enabled services. In addition, our sales process is highly dependent on the quality of our hardware and software-enabled services, on our business reputation and on strong recommendations from our existing customers. Any failure to maintain high-quality and highly-responsive technical support, or a market perception that we do not maintain high-quality and highly-responsive support, could adversely affect our reputation, our ability to sell our products to existing and prospective customers, and our business, financial condition and results of operations.

We offer technical support services with our hardware and software-enabled services and may be unable to respond quickly enough to accommodate short-term increases in demand for support services, particularly as we increase the size of our customer base. We also may be unable to modify the format of our support services to compete with changes in support services provided by competitors. It is difficult to predict demand for technical support services and if demand increases significantly, we may be unable to provide satisfactory support services to our customers. Additionally, increased demand for these services, without corresponding revenue, could increase costs and adversely affect our business, financial condition and results of operations.

Our hardware and software-enabled products involve a lengthy sales cycle, and if we fail to close sales on a regular and timely basis it could adversely affect our business, financial condition and results of operations.

Our sales cycle is typically six to twelve months for our hardware and software-enabled products, but can vary considerably. To make a sale, we must typically provide a significant level of education to prospective customers regarding the use and benefits of our hardware and software-enabled products. The period between initial discussions with a potential customer and the sale of even one of our various products typically depends on a number of factors, including the potential customer's budget and decision as to the type of financing it chooses to use, as well as the arrangement of such financing. Prospective customers often undertake a significant evaluation process, which may further extend the sales cycle. This lengthy sales cycle is subject to a number of significant risks over which we have little or no control. Because of both the long sales and installation cycles, we may expend significant resources without having certainty of generating a sale.

These lengthy sales and installation cycles increase the risk that our customers fail to satisfy their payment obligations or cancel orders before the completion of the transaction or delay the planned date for installation. Cancellation rates may be impacted by factors outside of our control including an inability to install solar energy hardware at the customer's chosen location because of permitting or other regulatory issues, unanticipated changes in the cost or availability of alternative sources of electricity available to the customer or other reasons unique to each customer. Our operating expenses are based on anticipated sales levels, and many of our expenses are fixed. If we are unsuccessful in closing sales after expending significant resources or if we experience delays or cancellations, our business, financial condition and results of operations could be adversely affected.

Additionally, we have ongoing arrangements with our customers and target customers. Some of these arrangements are evidenced by contracts or long-term contract partnership arrangements. If these arrangements are terminated or if we are unable to continue to fulfill the obligations under such contracts or arrangements, our business, financial condition and results of operations could be adversely affected.

Our business is subject to risks associated with construction, utility interconnection, cost overruns and delays, including those related to obtaining government permits and other contingencies that may arise in the course of completing installations.

The installation and operation of our solar energy hardware at a particular site is generally subject to oversight and regulation in accordance with national, state and local laws and ordinances relating to building codes, safety, environmental protection and related matters, and typically requires obtaining and keeping in good standing various local and other governmental approvals and permits, including environmental approvals and permits, that vary by jurisdiction. In some cases, these approvals and permits require periodic renewal. It is difficult and costly to track the requirements of every individual authority having jurisdiction over energy storage system installations, to design our solar energy hardware to comply with these varying standards, and for our customers to obtain all applicable approvals and permits. We cannot predict whether or when all permits required for a given customer's project will be granted or whether the conditions associated with the permits will be achievable. The denial of a permit or utility connection essential to a project or the imposition of impractical conditions would impair our customer's ability to develop the project. In addition, we cannot predict whether the permitting process will be lengthened due to complexities and appeals. Delay in the review and permitting process for a project can impair or delay our customers' abilities to develop that project or increase the cost so substantially that the project is no longer attractive to our customers. Furthermore, unforeseen delays in the review and permitting process could delay the timing of the installation of our solar energy hardware and could therefore adversely affect the timing of the recognition of revenue related to hardware acceptance by our customer, which could adversely affect our operating results in a particular period.

In addition, the successful installation of our solar energy hardware is dependent upon the availability of and timely connection to the local electric grid. We may be unable to obtain the required consent and authorization of local utilities to ensure successful interconnection to energy grids to enable the successful discharge of renewable energy to customers. Any delays in our customers' ability to connect with utilities, delays in the performance of installation-related services or poor performance of installation-related services will have an adverse effect on our results and could cause operating results to vary materially from period to period.

The threat of global economic, capital markets and credit disruptions, including sovereign debt issues, pose risks to our business.

The threat of global economic, capital markets and credit disruptions pose risks to our business. These risks include slower economic activity and investment in projects that make use of our products and services. These economic developments, particularly decreased credit availability, have in the past reduced demand for solar products. For instance, the European sovereign debt crisis in recent years has caused and may continue to cause European governments to reduce, eliminate or allow to expire government subsidies and economic incentives for solar energy, which could limit our growth or cause our net sales to decline and materially and adversely affect our business, financial condition, and results of operations. These conditions, including reduced incentives, continued decreases in credit availability, as well as continued economic instability, have and may continue to adversely impact our business, financial condition and results of operations as we seek to increase our sales internationally.

Fluctuations in currency exchange rates may negatively impact our financial condition and results of operations.

Although our revenues are generated in U.S. dollar, a portion of our operating expenses are accrued in New Israeli Shekels (primarily related to payroll), the Euro and, to a lesser extent, the Yuan. Our profitability is affected by movements of the U.S. dollar against the Euro, and, to a lesser extent, the New Israeli Shekel, Yuan and other currencies in which we generate revenues, incur expenses, and maintain cash balances. Foreign currency fluctuations may also affect the prices of our products which are denominated primarily in U.S. dollars. If there is a devaluation of a particular currency, the prices of our products will increase relative to the local currency and may be less competitive. Despite our efforts to minimize foreign currency risks, primarily by maintaining cash balances in New Israeli Shekels, significant long-term fluctuations in relative currency values, in particular a significant change in the relative values of the Euro and, New Israeli Shekel, Yuan and other currencies, against the U.S. dollar could have an adverse effect on our profitability and financial condition.

Third-Party Partner Risks

We depend on sole-source and limited-source suppliers for key components, raw materials, and products. If we are unable to source these components, raw materials, and products on a timely basis or at acceptable prices, we will not be able to deliver our products to our customers and production time and production costs could increase, which may adversely affect our business.

We depend on limited-source suppliers for certain key components of our products, such as our lithium-ion batteries, inverters, Auto Transfer Switches, and smart meters, as well as sole-source suppliers for other components, such as CPUs, Wi-Fi chips, FPGA chips, potting, and plastics. Any of the sole-source and limited-source suppliers upon whom we rely on could experience quality and reliability issues, stop producing our components, cease operations, or be acquired by, or enter into exclusive arrangements with, our competitors. Any such quality or reliability issue, or interruption or delay may force us to seek similar components or products from alternative sources, which may not be available on commercially reasonable terms, or at all. Switching suppliers may require that we redesign our products to accommodate new components, and may potentially require us to re-qualify our products, which would be costly and time-consuming. Any interruption in the quality or supply of sole-source or limited-source components for our products would adversely affect our ability to meet scheduled product deliveries to our customers and could result in lost revenue or higher expenses and would harm our business.

While our supply agreements have automatic renewal provisions, some allow for termination upon advanced written notice by our manufacturers. Our supply agreements require us to place individual purchase orders, which provide flexibility in regard to product quantities and pricing. Each purchase order requires us to forecast our projected demand for products and competitive pricing. Termination of any supply agreement, incorrectly projecting our demand or pricing of materials, or our inability to negotiate and execute successive purchase orders could have a material adverse effect on our business.

Our supply chain is reliant upon manufacturers in Thailand and China. Changes in the economic, political or social conditions, government policies or regulatory developments in those countries could have a material adverse effect on our business and operations.

All of our manufacturers are headquartered and have manufacturing facilities in Thailand and China. Accordingly, our supply chain, financial condition and results of operations may be influenced to a significant degree by political, economic and social conditions in those countries. The Asian economy differs from most developed markets in many respects, including the level of government involvement, level of development, growth rate, control of foreign exchange, government policy on public order and allocation of resources. In some of the Asian markets, governments continue to play a significant role in regulating industry development by imposing industrial policies. Moreover, some Asian markets have experienced, and may in the future experience, political and economic instabilities, which include but are not limited to strikes, demonstrations, protests, marches, coups d'état, guerilla activity, risks of war, terrorism, nationalism or other types of civil disorder, and regulatory changes such as nullification of contracts. For example, in particular, in recent years, tensions between China and Taiwan have further escalated, with China accelerating the development of military capabilities and threatening the use of military force to gain control over Taiwan in certain circumstances. Although we have not experienced any material disruptions related to our manufacturers to date, there can be no assurance that we will not experience such interruptions in the future, due to an escalation of tensions between China and Taiwan or otherwise.

Any adverse changes in economic conditions in Asia, or in the policies of the governments or of the laws and regulations in each respective jurisdiction of our manufacturers could have a material adverse effect on our business and operating results, lead to disruptions in our supply chain and adversely affect our competitive position.

Our hardware and software-enabled services rely on interconnections to distribution and transmission facilities that are owned and operated by third parties, and as a result, are exposed to interconnection and transmission facility development and curtailment risks.

Our hardware and software-enabled services are interconnected with electric distribution and transmission facilities owned and operated by regulated utilities necessary to deliver the electricity that our storage systems produce. A failure or delay in the operation or development of these distribution or transmission facilities could result in a loss of revenues or breach of a contract because such a failure or delay could limit the amount of renewable electricity that our solar energy hardware delivers or delay the completion of our customers' construction projects. In addition, certain components of our solar energy hardware generation may be curtailed without compensation due to distribution and transmission limitations, reducing our revenues and impairing our ability to capitalize fully on a particular customer project's potential. Such a failure or curtailment at levels above our expectations could impact our ability to satisfy agreements entered into with our suppliers and adversely affect our business.

We have in some instances, and may in the future, enter into long-term supply agreements that could result in insufficient inventory and negatively affect our results of operations.

We have entered into supply agreements with certain suppliers of battery storage systems and other components of our solar energy systems. Some of these supply agreements provide for fixed or inflation-adjusted pricing and substantial prepayment obligations. If our suppliers provide insufficient inventory at the level of quality required to meet customer demand, or if our suppliers are unable or unwilling to provide us with the contracted quantities, as we have limited alternatives for supply in the short term, our results of operations could be materially and negatively impacted. Further, we face significant specific counterparty risk under long-term supply agreements when dealing with certain suppliers without a long, stable production and financial history. Given the uniqueness of our product, many of our suppliers do not have a long operating history and may not have substantial capital resources. In the event any such supplier experiences financial difficulties, it may be difficult or may require substantial time and expense to replace such supplier. We do not know whether we will be able to maintain supply relationships with our critical suppliers, or secure new long-term supply agreements.

Additionally, many of the battery storage systems and components of our solar energy systems are procured from foreign suppliers, which exposes us to risks including unforeseen increases in costs or interruptions in supply arising from changes in applicable international trade regulations, such as taxes, tariffs, or quotas. Any of the foregoing could materially adversely affect our business, financial condition and results of operations.

We must maintain customer confidence in our long-term business prospects in order to grow our business.

Customers may be less likely to purchase our hardware and services if they are not convinced that our business will succeed or that our services and support and other operations will continue in the long term. 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, in order to grow our business, we must maintain confidence among our customers, OEM suppliers, analysts, ratings agencies, third-party general contractor partners, financing partners and other parties in our long-term business prospects. This may be particularly complicated by factors such as:

- our limited operating history at current scale;
- unfamiliarity with or uncertainty about our energy storage and management systems and the overall perception of the distributed and renewable energy generation markets;
- inexperience with new product offerings and services and difficulties arising from the successful rollout thereof;
- delivery and service operations to meet demand;
- prices for electricity in particular markets;
- competition from alternate sources of energy;

- warranty or unanticipated service issues we may experience in connection with third-party manufactured hardware and our proprietary software;
- the environmental consciousness and perceived value of environmental programs to our customers;
- the size of our expansion plans in comparison to our existing capital base and the scope and history of operations; and
- the availability and amount of incentives, credits, subsidies or other programs to promote installation of energy storage systems.

Several of these factors are largely outside our control, and any negative perceptions about our long-term business prospects, even if unfounded, would likely adversely affect our business, financial condition and results of operations.

Cybersecurity and Information Technology Risks

We are subject to stringent privacy laws, information security policies and contractual obligations governing the use, processing and transfer of personal information and any unauthorized access to, or disclosure or theft of personal information we gather, store or use could harm our reputation and subject us to claims or litigation.

We receive, store and use certain personal information of our customers, and the end-users of our customers' solar PV systems, including names, addresses, e-mail addresses, credit information and energy production statistics. We also store and use personal information of our employees. We take steps to protect the security, integrity and confidentiality of the personal information we collect, store and transmit, but there is no guarantee that inadvertent or unauthorized use or disclosure will not occur or that third parties will not gain unauthorized access to this information despite our efforts. Because techniques used to obtain unauthorized access or sabotage systems change frequently and generally are not identified until they are launched against a target, we and our suppliers or vendors may be unable to anticipate these techniques or to implement adequate preventative or mitigation measures.

We are subject to a variety of local, state, national and international laws, directives and regulations that apply to the collection, use, retention, protection, disclosure, transfer, and other processing of personal information in the different jurisdictions in which we operate, including comprehensive regulatory systems in the U.S. and Europe. California enacted the CCPA, which creates individual privacy rights for California consumers and increases the privacy and security obligations of entities handling certain personal information. The CCPA has been amended from time to time, including by the California Privacy Rights Act ("CPRA"), which was approved by California voters in the November 3, 2020 election. The CPRA significantly modified the CCPA, including by establishing particular consumer rights with respect to certain sensitive personal information. The CPRA also created a new state agency vested with authority to enforce the CCPA and implement regulations under the CCPA. It remains unclear what, if any, further modifications will be made to the CCPA or how such legislation will be interpreted. In addition, new legislation proposed or enacted in other states will continue to shape the data privacy environment nationally. Comprehensive data privacy laws in Virginia, Colorado, Connecticut, and Utah have been enacted and slated to go into effect in 2023; data privacy laws in Montana, Oregon, and Texas will take effect in 2024 and laws in four additional states will take effect in 2025. These state laws impose similar obligations on businesses and grant similar rights in consumers as is provided under the CCPA but some obligations under these state privacy statutes remain unclear, resulting in further legal uncertainty and potentially requiring us to modify our data practices and policies and to incur substantial additional costs and expenses in an effort to comply. Complying with these and other laws, regulations, amendments to or re-interpretations of existing laws and regulations, and contractual or other obligations relating to privacy, data protection, data transfers, data localization, or information security may require us to make changes to our services to enable us or our customers to meet new legal requirements, incur substantial operational costs, modify our data practices and policies, and restrict our business operations. All 50 states have laws requiring businesses to provide notification of certain breaches of personal information to affected individuals, state agencies and others.

On May 25, 2018, the EU began enforcement of the GDPR. The GDPR applies to organizations within the EU that process personal information and organizations located outside of the EU that process personal information of individuals in the EU where such processing relates to either: (a) the offering of goods or services to individuals in the EU; or (b) the monitoring of the behavior of individuals as far as that behavior takes place within the EU. The UK

GDPR applies in the same manner, with respect to the UK, following the UK's departure from the EU. The GDPR/UK GDPR impose strict requirements to implement appropriate technical and organizational measures to keep personal information secure, and to report data breaches to data protection authorities, and potentially to affected individuals, within specified timescales.

The GDPR/UK GDPR also impose strict requirements on the transfer of personal information out of the EEA/UK to the United States and other third countries. Organizations in the EEA may transfer personal information to US companies (and companies based in other third countries) on the basis of the new standard contractual clauses ("updated SCCs") published by the European Commission in 2021. In addition, on July 10, 2023 the European Commission adopted an adequacy decision regarding the EU-US Data Privacy Framework ("DPF") which allows organizations in the EEA to transfer personal information to US companies that self-certify to the DPF (which forgoes the need to implement the updated SCCs). The UK Information Commissioner's Office has also issued new data transfer agreements: a UK Addendum to the updated SCCs; and a standalone International Data Transfer Agreement ("UK IDTA"), and, effective on October 12, 2023, the UK adopted the UK-US Data Bridge, that largely applies the DPF in the context of transfers of personal data from the UK to companies in the United States that participate in the DPF and the Data Bridge extension. Presently, the primary means of validly transferring personal information from the EEA/UK to the United States are the DPF/Data Bridge and the updated SCCs/UK Addendum/UK IDTA, which should be supported by a transfer impact assessment detailing the risks to the personal information that have been transferred according to the application of local laws in the jurisdiction to which they are being transferred. Where personal information is transferred without updated SCCs/UK Addendum/UK IDTA in place, and/or any other valid transfer mechanism, this creates a risk of enforcement action for non-compliance with the requirements of the GDPR/UK GDPR.

The GDPR also imposes strict requirements on the transfer of Personal Data out of the European Economic Area ("EEA") to the United States and other third countries. In July 2020, the Court of Justice of the European Union issued a decision that struck down the EU-U.S. Privacy Shield framework, which provided companies with a mechanism to comply with data protection requirements when transferring Personal Data from the EEA to the United States and additionally called into question the validity of the European Commission's Standard Contractual Clauses ("SCCs"), on which U.S. companies rely to transfer personal information from the EEA to the United States and elsewhere. Presently, the primary means of validly transferring personal information from the EEA to the United States is the updated SCCs of the European Commission, which should be supported by a transfer impact assessment detailing the risks to the personal information that have been transferred according to the application of local laws in the jurisdiction to which they are being transferred. Where personal information is transferred without SCCs in place, and/or any other valid transfer mechanism, this creates a risk of enforcement action for non-compliance with the requirements of the GDPR.

On June 28, 2021, the European Commission announced a decision of "adequacy" concluding that the UK ensures an equivalent level of data protection to the GDPR. The UK had already announced a reciprocal adequacy finding in respect of the EU. The effect of these adequacy decisions is that personal information may flow between the EEA and the UK without hindrance and/or the need to implement any specific data transfer mechanism. These adequacy decisions must be reviewed after four years and are subject to modification or revocation at any time. We note that the UK government has indicated its intention to amend the UK GDPR, the Data Protection Act 2018 and other laws relevant to privacy and cybersecurity. The impact of any changes to existing privacy and cybersecurity laws will not be clear until full details of these changes have been published and agreed.

The EU / UK also impose cybersecurity obligations on organizations that operate in critical sectors of the economy (for example, the UK energy sector) and/or provide specific services (e.g., digital services such as online search engines). These cybersecurity obligations are primarily imposed through EU Member States' implementation of directive (EU) 2016/1148 (the "NIS Directive") and the Network and Information Systems Regulations 2018/506 (the "UK NIS Regulations"). Multinational organizations providing services in the UK and across EU Member States may be exposed to overlapping obligations, compliance requirements, and regulatory oversight.

The UK NIS Regulations and the NIS Directive require that in-scope entities take appropriate and proportionate measures (having regard to the state of the art) to manage risks posed to the security of the network and information systems on which their services rely and to minimize the impact of incidents with a view to ensuring the continuity of service. In addition, in-scope entities are required to notify relevant authorities without undue delay of any incident having a significant impact on the continuity of the service (in the UK, organizations have 72 hours from the moment of becoming aware of such an incident to notify). Failure to comply with these requirements exposes in-scope entities: (i) to fines of up to £17million, if subject to the UK NIS Regulations; and (ii) to the applicable sanctions for non-compliance set forth in the implementing legislation of the EU Member State whose laws are applicable.

The NIS Directive will be repealed with effect from October 18, 2024 and replaced with Directive (EU) 2022/2555 (the "NIS 2 Directive"). The NIS 2 Directive imposes a more robust range cybersecurity obligations than the NIS Directive, including a list of minimum cybersecurity measures that must be adopted. In addition, the management body of an entity subject to the EU Member State law implementing the NIS 2 Directive may be held liable for non-compliance. The NIS 2 Directive provides that national cybersecurity authorities have a more extensive array of enforcement tools at their disposal, have greater access to information, and benefit from a more considered approach to cross-border and regulatory cooperation. The NIS 2 Directive also establishes consistent minimum standards with respect to regulatory oversight, enforcement, and sanctions. Although the NIS 2 Directive broadens the range of specific cybersecurity measures that in-scope entities must adopt, these measures only represent minimum requirements. It remains open to EU Member States to impose more stringent requirements on in-scope entities with respect to cybersecurity than provided for under the text of the NIS 2 Directive. This could lead to divergences in approach and make compliance more challenging and costly for multinational organizations with exposure to national laws implementing the NIS 2 Directive across Member States. Organization's subject to the EU Member State laws implementing the NIS 2 Directive may be subject to fines capped at the greater of: (i) at least €10 million or (ii) 2% of total annual worldwide turnover.

The UK has also implemented the Product Security and Telecommunications Infrastructure Act 2022 ("PSTI") which, amongst other things, imposes obligations on manufacturers, importers and distributors of specific categories of consumer connectable products to comply with minimum security requirements with a view to securing such products against cyber-attacks. Non-compliance with PSTI exposes the organization to fines up to the greater of £10 million or 4% of worldwide revenue. The EU is also due to implement the Cyber Resilience Act (the "CRA") which will impose obligations on manufacturers, importers and distributors of products with a digital component to ensure that such products adhere to minimum security requirements. Failure to comply with the CRA exposes organizations to fines of up to the greater of €15 million or 2.5 % of annual worldwide turnover.

Compliance with U.S. and international data protection and cybersecurity laws and regulations could cause us to incur substantial costs or require us to change our business practices and compliance procedures in a manner adverse to our business. Our and our collaborators' and contractors' failure to fully comply with GDPR/UK GDPR, the CCPA and other data protection and cybersecurity laws could lead to significant fines and require onerous corrective action. In addition, data security breaches experienced by us, our collaborators or contractors could result in the loss of trade secrets or other intellectual property, public disclosure of sensitive commercial data, and the exposure of personal information (including sensitive personal information) of our employees, customers, collaborators and others, leading to loss of business opportunities and other adverse effects. Compliance with these and any other applicable privacy and data security laws and regulations is a rigorous and time-intensive process, and we may be required to put in place additional mechanisms ensuring compliance with the new data protection rules. Furthermore, the laws are not consistent, and compliance with various different requirements may be costly. If we fail to comply with any such laws or regulations, we may face significant fines and penalties that could adversely affect our business, financial condition and results of operations.

Unauthorized use or disclosure of, or access to, any personal information maintained by us or on our behalf, whether through breach of our systems, breach of the systems of our suppliers or vendors by an unauthorized party, or through employee or contractor error, theft or misuse, or otherwise, could harm our business. If any such unauthorized use or disclosure of, or access to, such personal information was to occur, our operations could be seriously disrupted, and we could be subject to demands, claims and litigation by private parties, and investigations, related actions, and penalties by regulatory authorities. In addition, we could incur significant costs in notifying affected persons and entities and otherwise complying with the multitude of foreign, federal, state and local laws and regulations relating to the unauthorized access to, or use or disclosure of, personal information. Finally, any perceived or actual unauthorized access to, or use or disclosure of, such information could harm our reputation, substantially impair our ability to attract and retain customers and have an adverse impact on our business, financial condition and results of operations.

A failure of our information technology and data security infrastructure could adversely affect our business and operations.

Our business and operations may be impacted by cybersecurity incidents, data security breaches and cybersecurity attacks, including attempts to gain unauthorized access to confidential data. We rely upon the capacity, reliability and security of our IT and data security infrastructure and our ability to expand and continually update this infrastructure in response to the changing needs of our business. Our existing IT systems and any new IT systems we utilize may not perform as expected. If we experience a problem with the functioning of an important IT system or a security breach of our IT systems, including during system upgrades or new system implementations, the resulting disruptions could adversely affect our business.

Despite our implementation of reasonable security measures, our IT systems, like those of other companies, are vulnerable to damages from computer viruses, natural disasters (including as a result of climate change), fire, power loss, telecommunications failures, personnel misconduct, human error, unauthorized access, physical or electronic security breaches, cyber-attacks (including malicious and destructive code, phishing attacks, ransomware, and denial of service attacks), and other similar disruptions. Such attacks or security breaches may be perpetrated by bad actors internally or externally (including computer hackers, persons involved with organized crime, or foreign state or foreign state-supported actors). In addition, some of our products connect to the internet. Despite our implementation of reasonable security measures, these connected products, like those of other companies who produce devices connected to the internet, are vulnerable to unauthorized access and other security breaches. Cybersecurity threat actors employ a wide variety of methods and techniques that are constantly evolving, increasingly sophisticated, and difficult to detect and successfully defend against. Any future incidents could expose us to claims, litigation, regulatory or other governmental investigations, administrative fines and potential liability. Any system failure, accident or security breach could result in disruptions to our operations. A material network breach in the security of our IT systems could include the theft of our trade secrets, customer information, human resources information or other confidential data, including but not limited to personally identifiable information. A breach in the security of our connected products could lead to a disruption in service, remediation costs, loss of reputation, and loss of sales. Although past incidents have not had a material effect on our business operations or financial performance, to the extent that any disruptions or security breach results in a loss or damage to our data, or an inappropriate disclosure of confidential, proprietary or customer information, it could cause significant damage to our reputation, affect our relationships with our customers and strategic partners, lead to claims against us from governments and private plaintiffs, and adversely affect our business. While we have been subject to cyberattacks or other IT systems disruptions in the past, to our knowledge, we have not experienced a material cybersecurity incident to date. We cannot guarantee that future cyberattacks, if successful, will not have a material effect on our business or financial results.

Many governments have enacted laws requiring companies to implement minimum cybersecurity measures (as detailed above) and to provide notice of cyber incidents involving certain types of data, including personal information. If an actual or perceived cybersecurity breach of security measures, unauthorized access to our system or the systems of the third-party vendors that we rely upon, or any other cybersecurity threat occurs, we may incur liability, costs, or damages, contract termination, our reputation may be compromised, our ability to attract new customers could be negatively affected, and our business, financial condition, and results of operations could be materially and adversely affected. We could also be subject to regulatory investigations for non-compliance with applicable cybersecurity laws, be subject to significant fines, and/or be subject to litigation from anyone harmed as a result of non-compliance. Any compromise of our security or the security of our products, could also result in a violation of applicable domestic and foreign security, privacy or data protection, consumer and other laws, regulatory or other governmental investigations, enforcement actions, and legal and financial exposure, including potential contractual liability. In addition, we may be required to incur significant costs to protect against and remediate damage caused by these disruptions or security breaches in the future.

Competition Risks

We currently face and will continue to face significant competition.

We compete for customers, financing partners and incentive dollars with other solar energy hardware and software solution providers. Many providers of electricity, such as traditional utilities and other companies offering distributed generation products, have longer operating histories, customer incumbency advantages, access to and influence with local and state governments, and more capital resources than we do. Significant developments in alternative energy technologies or improvements in the efficiency or cost of traditional energy sources, including coal, oil, natural gas used in combustion or nuclear power, may materially and adversely affect our business and prospects in ways we cannot anticipate. We may also face new solar energy hardware and software solutions competitors who are not currently in the market. If we fail to adapt to changing market conditions and to compete successfully with new competitors, we will limit our growth and adversely affect our business results.

We face supply chain competition, including competition from businesses in other industries, which could result in insufficient inventory and negatively affect our results of operations.

Certain of our suppliers also supply systems and components to other businesses, including businesses engaged in the production of consumer electronics and other industries unrelated to solar energy hardware and software solutions. As a relatively low-volume purchaser of certain of these parts and materials, we may be unable to procure a sufficient supply of the items in the event that our suppliers fail to produce sufficient quantities to satisfy the demands of all of their customers, which could materially adversely affect our business, financial condition and results of operations.

If we are not able to continue to reduce our cost structure in the future, our ability to increase our gross margins may be impaired.

We must continue to reduce the costs of production, installation and operation of our solar energy hardware and software solutions to expand our market. For example, during the fourth quarter of 2023, the Company reduced staffing levels across all geographies by approximately 15% to better align with its cost structure and current environment. If our competitors are able to drive down their manufacturing costs faster than we can or increase the efficiency of their products, our products may become less competitive even when adjusted for efficiency, and we may be forced to sell our products at a price lower than our cost. Further, if raw materials costs and other third-party component costs were to increase, we may not meet our cost reduction targets. If we cannot effectively execute our cost reduction roadmap, we may not be able to remain price competitive, which would result in lost market share and lower gross margins.

Additionally, certain of our existing service contracts were entered into based on projections regarding service costs reductions that assume continued advances in the cost of delivery of our services, which we may be unable to realize. While we have been successful in reducing our costs to date, the cost of battery storage systems and other components of our energy storage systems, for example, could increase in the future. Any such increases could slow our growth and cause our financial results and operational metrics to suffer. In addition, we have in the past faced increases in our other expenses, including increases in wages or other labor costs, as well as marketing, sales or related costs, and we may continue to experience such increases in the future. We will continue to make significant investments to drive growth in the future. In order to expand into new markets while still maintaining our current margins, 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 business, financial condition and results of operations. If we are unable to reduce our cost structure in the future, our net profits may decrease, which could have a material adverse effect on our business and prospects.

We may fail to capture customers in the new product and geographic markets that we are pursuing.

We are pursuing opportunities in energy management and energy storage which are highly competitive markets. We have made investments in our infrastructure, increased our operating costs and forgone other business opportunities in order to seek opportunities in these areas and will continue to do so. Any new product is subject to certain risks, including component sourcing, strategic partner selection and execution, customer acceptance, competition, product differentiation, market timing, challenges relating to economies of scale in component sourcing and the ability to attract and retain qualified personnel. There can be no assurance that we will be able to develop and grow these or any other new concepts to a point where they will become profitable or generate positive cash flow. If we fail to execute on our plan with respect to new product introductions, these new potential business segments fail to translate into revenue in the quantities or timeline projected, thus, having a materially adverse impact on our revenue, operating results and financial stability.

Our new products are complex and require significant preparation, precautionary safety measures, time-consuming string calculations, extensive design expertise and specialized installation equipment, training and knowledge. Together, these factors significantly increase complexity and cost of installation and limit overall productivity for the installer. Our installers may not have sufficient resources or expertise necessary to sell our products at the prices, in the volumes and within the time frames that we expect, which could hinder our ability to expand our operations and harm our revenue and operating results.

Risks Related to Intellectual Property and Technology

Our patent applications may not result in issued patents, and our issued patents may not provide adequate protection, which may have a material adverse effect on our ability to prevent others from commercially exploiting products similar to ours.

We cannot be certain that our pending patents will result in granted patents or that any of our granted patents will afford protection against a competitor. 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 granted, or that our patents and any patents that may be granted to us in the future will afford protection against competitors with similar technology. In addition, patent applications filed in foreign countries are subject to laws, rules and procedures that differ from those of the U.S., and thus we cannot be certain that foreign patent applications related to granted U.S. patents will be granted in other regions. Furthermore, even if these patent applications are accepted and the associated patents issued, some foreign countries provide significantly less effective patent enforcement than in the U.S.

We rely on third-party agents for the maintenance of certain foreign patent assets, and we cannot be certain that all necessary steps have been taken to maintain those assets in good standing. A failure to maintain key intellectual property assets could have a materially adverse effect on our business, prospects, and operating results.

In addition, patents granted 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, prospects, and operating results.

Our failure to protect our intellectual property rights may undermine our competitive position, and litigation to protect our intellectual property rights may be costly.

Although we have taken many protective measures to protect our intellectual property, including trade secrets, policing unauthorized use of proprietary technology can be difficult and expensive. For example, we have software developers that reside in California, and it is not legally permissible to prevent them from working for a competitor.

Also, litigation may be necessary to enforce our intellectual property rights, protect our trade secrets, or determine the validity and scope of the proprietary rights of others. Such litigation may result in our intellectual property rights being challenged, limited in scope or declared invalid or unenforceable. We cannot be certain that the outcome of any litigation will be in our favor, and an adverse determination in any such litigation could impair our intellectual property rights and may adversely affect our business, prospects and reputation.

We rely primarily on patent, trade secret and trademark laws, and non-disclosure, confidentiality, and other types of contractual restrictions to establish, maintain, and enforce our intellectual property and proprietary rights. However, our rights under these laws and agreements afford us only limited protection and the actions we take to establish, maintain, and enforce our intellectual property rights may not be adequate. For example, our trade secrets and other confidential information could be disclosed in an unauthorized manner to third parties, our owned or licensed intellectual property rights could be challenged, invalidated, circumvented, infringed, or misappropriated or our intellectual property rights may not be sufficient to provide us with a competitive advantage, any of which could have a material adverse effect on our business, financial condition and results of operations. In addition, the laws of some countries do not protect proprietary rights as fully as do the laws of the U.S. As a result, we may not be able to protect our proprietary rights adequately abroad.

We may need to defend ourselves against claims that we infringe, have misappropriated, or otherwise violate the intellectual property rights of others, which may be time-consuming and would cause us to incur substantial costs.

Companies, organizations or individuals, including our competitors, may hold or obtain patents, trademarks or other proprietary rights that they may in the future believe are infringed by our products. In the future, we may be subject to claims related to our intellectual property. Companies holding patents or other intellectual property rights relating to our technologies could, in the future, make claims or bring suits alleging infringement, misappropriation or other violations of such rights, or otherwise asserting their rights and seeking licenses or injunctions. If a claim is successfully brought in the future and we or our products are determined to have infringed, misappropriated, or otherwise violated a third-party's intellectual property rights, we may be required to do one or more of the following:

- cease selling products that incorporate the challenged intellectual property;
- pay substantial damages (including treble damages and attorneys' fees if our infringement is determined to be willful);
- obtain a license from the holder of the intellectual property right, which license may not be available on reasonable terms or at all; or
- redesign our products or services, which may not be possible or cost-effective.

Any of the foregoing could adversely affect our business, financial condition and operating results. In addition, any litigation or claims, whether or not valid, could adversely affect our reputation, result in substantial costs, and divert resources and management attention.

We also license technology from third parties, and incorporate components supplied by third parties into our hardware. We may face claims that our use of such technology or components infringes or otherwise violates the rights of others, which would subject us to the risks described above. We may seek indemnification from our licensors or suppliers under our contracts with them, but our rights to indemnification or our suppliers' resources may be unavailable or insufficient to cover our costs and losses.

Our failure to obtain the right to use necessary third-party intellectual property rights on reasonable terms, or our failure to maintain, and comply with the terms and conditions applicable to these rights, could harm our business and prospects.

We have licensed, and in the future we may choose or be required to license, technology or intellectual property from third parties in connection with the development and marketing of our products. We cannot provide assurance that such licenses will be available to us on commercially reasonable terms, or at all, and our inability to obtain such licenses could require us to substitute technology of lower quality or of greater cost.

Further, such licenses may be non-exclusive, which could result in our competitors gaining access to the same intellectual property. The licensing or acquisition of third-party intellectual property rights is a competitive area, and other established companies may pursue strategies to license or acquire third-party intellectual property rights that we may consider attractive or necessary. These established companies may have a competitive advantage over us due to their size, capital resources or greater development or commercialization capabilities. In addition, companies that perceive us to be a competitor may be unwilling to assign or license rights to us. We could encounter delays and incur significant costs, in product or service introductions while we attempt to develop alternative products or services, or redesign our products or services, to avoid infringing third party patents or proprietary rights. Failure to obtain any such licenses or to develop a workaround could prevent us from commercializing products or services, and the prohibition of sale or the threat of the prohibition of sale of any of our products or services could materially affect our business and our ability to gain market acceptance for our products or services.

In addition, we incorporate open source software code in our proprietary software. Use of open source software can lead to greater risks than use of third-party commercial software, since open source licensors generally do not provide warranties or controls with respect to origin, functionality or other features of the software. Further, companies that incorporate open source software into their products have, from time to time, faced claims challenging their use of open source software and compliance with open source license terms. As a result, we could be subject to lawsuits by parties claiming ownership of what we believe to be open source software or claiming noncompliance with open source licensing terms. Some open source software licenses require users who distribute open source software as part of their products to publicly disclose all or part of the source code in their software and make any derivative works of the open source code available for limited fees or at no cost. Although we monitor our use of open source software, open source license terms may be ambiguous, and many of the risks associated with the use of open source software cannot be eliminated. If we were found to have inappropriately used open source software, we may be required to release our proprietary source code, re-engineer our software, discontinue the sale of certain products in the event re-engineering cannot be accomplished on a timely basis, or take other remedial action. Furthermore, if we are unable to obtain or maintain licenses from third parties or fail to comply with open source licenses, we may be subject to costly third party claims of intellectual property infringement or ownership of our proprietary source code. There is little legal precedent in this area and any actual or claimed requirement to disclose our proprietary source code or pay damages for breach of contract could harm our business and could help third parties, including our competitors, develop products and services that are similar to or better than ours. Any of the above could harm our business and put us at a competitive disadvantage.

Patent terms may be inadequate to protect our competitive position on our products for an adequate amount of time.

Patents have a limited lifespan. In the United States, if all maintenance fees are timely paid, the natural expiration of utility and design patents are generally 20 years and 15 years, respectively, from its earliest U.S. non-provisional filing date. Various extensions may be available, but the life of a patent, and the protection it affords, is limited. Even if patents covering our products are obtained, once the patent life has expired, we may be open to competition from competitive products. If one of our products requires extended development, testing and/or regulatory review, patents protecting such products might expire before or shortly after such products are commercialized. As a result, our owned and licensed patent portfolio may not provide us with sufficient rights to exclude others from commercializing products similar or identical to ours.

We may become subject to claims for remuneration or royalties for assigned service invention rights by our employees, which could result in litigation and adversely affect our business.

We enter into agreements with our employees pursuant to which they agree that any inventions created in the scope of their employment or engagement are assigned to us or owned exclusively by us, depending on the jurisdiction, without the employee retaining any rights. A significant portion of our intellectual property has been developed by our employees in the course of their employment for us. Although our employees have agreed that any rights related to their inventions are owned exclusively by us, we may face claims demanding remuneration in consideration for such acknowledgement. As a consequence of such claims, we could be required to pay additional remuneration or royalties to our current and/or former employees, or be forced to litigate such claims, which could negatively affect our business.

Risks Related to Our Financial Condition and Liquidity

We may require additional capital, which additional financing may result in restrictions on our operations or substantial dilution to our stockholders, to support the growth of our business, and this capital might not be available on acceptable terms, if at all.

We have funded our operations since inception primarily through financing transactions such as the issuance of bonds, convertible promissory notes and loans, and sales of convertible preferred stock. We cannot be certain when or if our operations will generate sufficient cash to fully fund our ongoing operations or the growth of our business. We intend to continue to make investments to support our business, which may require us to engage in equity or debt financings to secure additional funds. Additional financing may not be available on terms favorable to us, if at all. In particular, the current disruption in the global financial markets may reduce our ability to access capital and negatively affect our liquidity in the future. If adequate funds are not available on acceptable terms, we may be unable to invest in future growth opportunities, which could harm our business, operating results, and financial condition. If we incur additional debt, the debt holders would have rights senior to holders of common stock to make claims on our assets, and the terms of any debt could restrict our operations, including our ability to pay dividends to holders of our common stock. If we undertake discretionary financing by issuing equity securities, our stockholders may experience substantial dilution. We may sell common stock, convertible securities or other equity securities in one or more transactions at a price per share that is less than the price per share paid by current stockholders. If we sell common stock, convertible securities, or other equity securities in more than one transaction, stockholders may be further diluted by subsequent sales. Additionally, future equity financings may result in new investors receiving rights superior to our existing stockholders. Because our decision to issue securities in the future will depend on numerous considerations, including factors beyond our control, we cannot predict or estimate the amount, timing, or nature of any future issuances of debt or equity securities. As a result, our stockholders bear the risk of future issuances of debt or equity securities reducing the value of our common stock and diluting their interests.

We are under continuous pressure to reduce the prices of our products, which has adversely affected, and may continue to adversely affect, our gross margins.

The solar power industry has been characterized by declining product prices over time. We have reduced the prices of our products in the past, and we expect to continue to experience pricing pressure for our products in the future, including from our major customers. In addition, we have reduced our prices ahead of planned cost reductions of our products, which has adversely affected our gross margins. When seeking to maintain or increase their market share, our competitors may also reduce the prices of their products. In addition, our customers may have the ability or seek to internally develop and manufacture competing products at a lower cost than we would otherwise charge, which would add additional pressure on us to lower our selling prices. If we are unable to offset any future reductions in our average selling prices by increasing our sales volume, reducing our costs and expenses or introducing new products, our gross margins would continue to be adversely affected.

If we do not forecast demand for our products accurately, we may experience product shortages, delays in product shipment, excess product inventory, difficulties in planning expenses or disputes with suppliers, any of which will adversely affect our business and financial condition.

We manufacture our products according to our estimates of customer demand. This process requires us to make multiple forecasts and assumptions relating to the demand of our distributors, their end customers and general market conditions. Because we sell most of our products to distributors, who in turn sell to their end customers, we have limited visibility as to end-customer demand. We depend significantly on our distributors to provide us visibility into their end-customer demand, and we use these forecasts to make our own forecasts and planning decisions. If the information from our distributors turns out to be incorrect, then our own forecasts may also be inaccurate. Furthermore, we do not have long-term purchase commitments from our distributors or end customers, and our sales are generally made by purchase orders that may be canceled, changed or deferred without notice to us or penalty. As a result, it is difficult to forecast future customer demand to plan our operations.

If we overestimate demand for our products, or if purchase orders are canceled or shipments are delayed, we may have excess inventory that we cannot sell. We may have to make significant provisions for inventory write-downs based on events that are currently not known, and such provisions or any adjustments to such provisions could be material. We may also become involved in disputes with our suppliers who may claim that we failed to fulfill forecast or minimum purchase requirements. Conversely, if we underestimate demand, we may not have sufficient inventory to meet end-customer demand, and we may lose market share, damage relationships with our distributors and end customers and forgo potential revenue opportunities. Obtaining additional supply in the face of product shortages may be costly or impossible, particularly in light of our outsourced manufacturing processes, which could prevent us from fulfilling orders in a timely and cost-efficient manner or at all. In addition, if we overestimate our production requirements, our contract manufacturers may purchase excess components and build excess inventory. If our contract manufacturers, at our request, purchase excess components that are unique to our products and are unable to recoup the costs of such excess through resale or return or build excess products, we could be required to pay for these excess parts or products and recognize related inventory write-downs.

In addition, we plan our operating expenses, including research and development expenses, hiring needs and inventory investments, in part on our estimates of customer demand and future revenue. If customer demand or revenue for a particular period is lower than we expect, we may not be able to proportionately reduce our fixed operating expenses for that period, which would harm our operating results for that period.

The issuance of Common Stock upon conversion of the Convertible Note (as defined below) could substantially dilute your investment and could impede our ability to obtain additional financing.

On January 9, 2023, we issued to L1 Energy the Convertible Note, an unsecured convertible promissory note in an aggregate principal amount of $50.0 million. The Convertible Note is convertible into Common Stock at a number equal to the outstanding principal balance as of the date of conversion divided by an amount equal to the quotient of (x) $550,000,000 divided by (y) the aggregate number of outstanding shares of Legacy Tigo's common stock, in each case subject to adjustment in accordance with the terms of the Convertible Note. Conversion of the Convertible Note would result in dilution to the equity interests of our other stockholders. We have no control over whether or when the holder will exercise its right to convert the Convertible Note. The existence and potentially dilutive impact of the conversion of the Convertible Note may prevent us from obtaining additional financing in the future on acceptable terms, or at all.

Our indebtedness and liabilities could limit the cash flow available for our operations, expose us to risks that could adversely affect our business, financial condition and results of operations, restrict our ability to incur additional indebtedness and impair our ability to satisfy our obligations under the Convertible Note.

Our indebtedness could have material adverse consequences for our security holders and our business, results of operations and financial condition by, among other things:

- increasing our vulnerability to adverse economic and industry conditions;
- limiting our ability to obtain additional financing;
- limiting our flexibility to plan for, or react to, changes in our business;
- diluting the interests of our existing security holders as a result of issuing common stock upon conversion of the Convertible Note; and
- placing us at a possible competitive disadvantage with competitors that are less leveraged than us or have better access to capital.

The Convertible Note includes financially restrictive covenants that, among other things, limit our ability to incur additional debt. Without the consent of the holder of the Convertible Note, we may not create, incur, assume, guarantee, or be or remain liable with respect to any senior indebtedness exceeding the greater of (i) $150,000,000 in the aggregate, (ii) an amount equal to 500% of Adjusted EBITDA for the period of 12 consecutive months ending on the last day of the fiscal month ended most recently prior to the date of incurrence of such senior indebtedness or (iii) the amount of senior indebtedness incurred by the Company pursuant to one or more asset-based credit facilities, working capital facilities, or receivable facilities secured only by liens on our or our subsidiaries' assets and property, plus interest accruing thereon and the termination value of interest rate hedges or currency swaps in respect thereof.

The Convertible Note matures on January 9, 2026. At maturity, unless converted or redeemed, we will need to repay the principal amount under the Convertible Note. Our business may not generate sufficient funds, and we may otherwise be unable to maintain sufficient cash reserves, to pay amounts due under our indebtedness, including the Convertible Note, and our cash needs may increase in the future.

We may be unable to raise the funds necessary to repurchase the Convertible Note for cash following a change of control, or to pay any cash amounts due upon redemption or conversion, and our other indebtedness may limit our ability to repurchase the Convertible Note or pay cash upon its conversion.

In the event of a change of control, the holder of the Convertible Note has the right to require us to convert all of the Convertible Note to common stock or redeem all of the outstanding principal amount of the Convertible Note plus unpaid interest (whether or not accrued) that would have otherwise accrued and been payable had the Convertible Note remaining outstanding through January 9, 2026. We may not have enough available cash or be able to obtain financing at the time we are required to redeem the Convertible Note or pay the cash amounts due upon conversion or redemption. In addition, applicable law, regulatory authorities and the agreements governing any future indebtedness may restrict our ability to repurchase the Convertible Note or pay the cash amounts due upon conversion or redemption. Our failure to repurchase the Convertible Note or to pay the cash amounts due upon conversion or redemption when required will constitute a default under the Convertible Note. A default under the Convertible Note could also lead to a default under agreements governing any future indebtedness, which may result in that other indebtedness becoming immediately payable in full. We may not have sufficient funds to satisfy all amounts due under such other indebtedness and the Convertible Note.

Provisions in the Convertible Note could delay or prevent an otherwise beneficial takeover of us.

Certain provisions in the Convertible Note could make a third-party attempt to acquire us more difficult or expensive. For example, if a takeover constitutes a change of control, then the holder will have the right to convert all of the Convertible Note or redeem all of the outstanding principal amount of the Convertible Note. In this case, and in other cases, our obligations under the Convertible Note could increase the cost of acquiring us or otherwise discourage a third party from acquiring us, including in a transaction that holders of our common stock may view as favorable.

Our disclosure controls and procedures may not prevent or detect all errors or acts of fraud.

We believe that any disclosure controls and procedures or internal controls and procedures, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. These inherent limitations include the realities that judgments in decision-making can be faulty, and that breakdowns can occur because of simple error or mistake. Additionally, controls can be circumvented by the individual acts of some persons, by collusion of two or more people or by an unauthorized override of the controls. Accordingly, because of the inherent limitations in our control system, misstatements or insufficient disclosures due to error or fraud may occur and not be detected.

We have incurred, and will continue to incur, increased costs as a result of being a public company, and the Company's management will be required to devote substantial time to compliance and investor relations initiatives.

As a public company, the Company has incurred and will continue to incur significant legal, accounting and other expenses that Legacy Tigo did not incur as a private company. The Company is subject to the reporting requirements of the Exchange Act and the Sarbanes-Oxley Act. The Exchange Act requires the filing of annual, quarterly and current reports with respect to a public company's business and financial condition. The Sarbanes-Oxley Act, as well as rules subsequently adopted by the SEC and Nasdaq to implement provisions of the Sarbanes-Oxley Act, require, among other things, that a public company establish and maintain effective disclosure and financial controls. As a result, the Company has incurred and will continue to incur significant legal, accounting and other expenses that Legacy Tigo did not previously incur. The Company's entire management team and many of its other employees devote substantial time to these compliance initiatives.

Further, pursuant to the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, the SEC has adopted additional rules and regulations in these areas, such as mandatory "say on pay" voting requirements that will apply to the Company when the Company ceases to be an emerging growth company. Stockholder activism, the current political environment and the current high level of government intervention and regulatory reform may lead to substantial new regulations and disclosure obligations, which may lead to additional compliance costs and impact the manner the Company operates its business in ways it cannot currently anticipate.

We expect to continue to incur significant legal and financial costs to comply with the rules and regulations applicable to public companies, which can make some activities more time consuming and costly. If these requirements divert the attention of the Company's management and personnel from other business concerns, they could have a material adverse effect on the Company's business, financial condition and results of operations. The increased costs will decrease the Company's net income or increase the Company's net loss, and may require the Company to reduce costs in other areas of the Company's business or increase the prices of the Company's services. The Company cannot predict or estimate the amount or timing of additional costs it may incur to respond to these requirements. The impact of these requirements could also make it more difficult for the Company to attract and retain qualified persons to serve on its board of directors, board committees or as executive officers.

Anti-takeover provisions in our governing documents and under Delaware law could make an acquisition of us more difficult.

The Charter, the Bylaws and Delaware law contain or will contain provisions that could have the effect of rendering more difficult, delaying, or preventing an acquisition deemed undesirable by the Company's board of directors. Among other things, the Charter and/or the Bylaws include the following provisions:

- limitations on convening special stockholder meetings, which could make it difficult for our stockholders to adopt desired governance changes;

- a prohibition on stockholder action by written consent, which means that our stockholders will only be able to take action at a meeting of stockholders and will not be able to take action by written consent for any matter;
- a forum selection clause, which means certain litigation against us can only be brought in Delaware;
- the authorization of undesignated preferred stock, the terms of which may be established and shares of which may be issued without further action by our stockholders;
- amendment of certain provisions of the organizational documents only by the affirmative vote of at least two-thirds of the voting power of the outstanding capital stock; and
- advance notice procedures, which apply for stockholders to nominate candidates for election as directors or to bring matters before an annual meeting of stockholders.

These provisions, alone or together, could delay or prevent hostile takeovers and changes in control or changes in our management. As a Delaware corporation, we are also subject to provisions of Delaware law, including Section 203 of the DGCL, which prevents interested stockholders, such as certain stockholders holding more than 15% of our outstanding common stock, from engaging in certain business combinations unless (i) prior to the time such stockholder became an interested stockholder, the board of directors approved the transaction that resulted in such stockholder becoming an interested stockholder, (ii) upon consummation of the transaction that resulted in such stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the common stock, or (iii) following board approval, such business combination receives the approval of the holders of at least two-thirds of our outstanding common stock not held by such interested stockholder at an annual or special meeting of stockholders.

Any provision of the Charter, the Bylaws or Delaware law that has the effect of delaying, preventing or deterring a change in control could limit the opportunity for our stockholders to receive a premium for their shares of our common stock and could also affect the price that some investors are willing to pay for our common stock.

Risks Related to the Ownership of Our Securities

The price of our Common Stock has been, and may continue to be, volatile, and the value of our Common Stock may decline.

Fluctuations in the price of the Company's securities could contribute to the loss of all or part of your investment. Following the Business Combination through December 31, 2023, the price of our Common Stock ranged from a low of $1.77 to a high of $26.26. Prior to the Business Combination, there was not a public market for the stock of Legacy Tigo. Accordingly, the valuation ascribed to the Company in the Business Combination may not be indicative of the price that will prevail in the trading market. As a result, the trading price of the Company's securities has been, and could continue to be, volatile and subject to wide fluctuations in response to various factors, some of which are beyond our control. Any of the factors listed below could have a material adverse effect on your investment in our securities and the Company's securities may trade at prices significantly below the price you paid for them. In such circumstances, the trading price of our securities may not recover and may experience a further decline.

Factors affecting the trading price of the Company's securities may include:

- actual or anticipated fluctuations in our quarterly financial results or the quarterly financial results of companies perceived to be similar to us;
- changes in the market's expectations about the Company's operating results;
- success of competitors;
- operating results failing to meet the expectations of securities analysts or investors in a particular period;
- changes in financial estimates and recommendations by securities analysts concerning the Company or the industry in which the Company operates in general;
- operating and stock price performance of other companies that investors deem comparable to the Company;

- ability to market new and enhanced products and services on a timely basis;
- changes in laws and regulations affecting our business;
- commencement of, or involvement in, litigation involving the Company;
- changes in the Company's capital structure, such as future issuances of securities or the incurrence of additional debt;
- the volume of shares of the Company's common stock available for public sale;
- any major change in the Company's board or management;
- sales of substantial amounts of the Company's common stock by our directors, executive officers or significant stockholders or the perception that such sales could occur; and
- general economic and political conditions such as recessions, changes in interest rates, changes in fuel prices, international currency fluctuations and acts of war or terrorism.

Broad market and industry factors may materially harm the market price of our securities irrespective of our operating performance. The stock market in general, and Nasdaq specifically, have experienced extreme volatility that has often been unrelated to the operating performance of particular companies. As a result of this volatility, you may not be able to sell your securities at or above the price at which it was acquired. A loss of investor confidence in the market for the stocks of other companies which investors perceive to be similar to the Company could depress our stock price regardless of our business, prospects, financial conditions or results of operations. A decline in the market price of our securities also could adversely affect our ability to issue additional securities and our ability to obtain additional financing in the future.

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

The share price of our Common Stock has been and may continue to be volatile and, in the past, companies that have experienced volatility in the market price of their stock have been subject to securities class action litigation. We may be the target of this type of litigation in the future. Litigation of this type could result in substantial costs and diversion of management's attention and resources, which could have a material adverse effect on our business, results of operations and financial condition. Any adverse determination in litigation could also subject us to significant liabilities.

We have in the past, and we may in the future, fail to maintain proper and effective internal controls over financial reporting, which could impair our ability to produce accurate and timely financial statements, cause investors to lose confidence in our financial reporting and the trading price of the Common Stock may decline.

Effective internal controls over financial reporting are necessary for the Company to provide reliable financial reports and, together with adequate disclosure controls and procedures, are designed to prevent fraud. Any failure to implement required new or improved controls, or difficulties encountered in their implementation could cause the Company to fail to meet its reporting obligations. In addition, any testing by the Company conducted in connection with Section 404 of the Sarbanes-Oxley Act ("Section 404") or any subsequent testing by the Company's independent registered public accounting firm, may reveal deficiencies in the Company's internal controls over financial reporting that are deemed to be material weaknesses or that may require prospective or retroactive changes to the Company's financial statements or identify other areas for further attention or improvement. Inferior internal controls could also cause investors to lose confidence in the Company's reported financial information, which could have a negative effect on the trading price of the Company's stock.

For example, for the fiscal period ended September 30, 2021, we identified a material weakness in our internal control over financial reporting relating to the accounting for complex financial instruments, which we remediated during the fiscal period ended December 31, 2023. For more information, see "Part II, Item 9A. Controls and Procedures."

The design of the Company's internal controls over financial reporting post-Business Combination has required and will continue to require significant time and resources from management and other personnel. As a result, management was unable, without incurring unreasonable effort or expense, to conduct an assessment of the

Company’s internal control over financial reporting as of December 31, 2023. Accordingly, the Company is excluding management’s report on internal control over financial reporting in this Annual Report on Form 10-K pursuant to Section 215.02 of the SEC Division of Corporation Finance’s Regulation S-K Compliance & Disclosure Interpretations. In addition, for as long as the Company is an emerging growth company, its independent registered public accounting firm will not be required to attest to the effectiveness of its internal controls over financial reporting pursuant to Section 404. An independent assessment of the effectiveness of the Company’s internal controls over financial reporting could detect problems that the Company’s management’s assessment might not detect. Undetected material weaknesses in the Company’s internal controls over financial reporting could lead to restatements of the Company’s consolidated financial statements and require the Company to incur the expense of remediation.

If the Company is not able to comply with the requirements of Section 404 in a timely manner or it is unable to maintain proper and effective internal controls over financial reporting, the Company may not be able to produce timely and accurate consolidated financial statements. As a result, the Company’s investors could lose confidence in its reported financial information, the market price of the Common Stock could decline, and the Company could be subject to sanctions or investigations by the SEC or other regulatory authorities.

If securities analysts do not publish research or reports about us, or if they issue unfavorable commentary about us or our industry or downgrade our common stock, the price of our common stock could decline.

The trading market for our common stock will depend in part on the research and reports that third-party securities analysts publish about us and the industries in which we operate. We may be unable or slow to attract research coverage and if one or more analysts cease coverage of us, the price and trading volume of our securities would likely be negatively impacted. If any of the analysts that may cover us change their recommendation regarding our securities adversely, or provide more favorable relative recommendations about our competitors, the price of our securities would likely decline. If any analyst that may cover us ceases covering us or fails to regularly publish reports on us, we could lose visibility in the financial markets, which could cause the price or trading volume of our securities to decline. Moreover, if one or more of the analysts who cover us downgrades our common stock, or if our reporting results do not meet their expectations, the market price of our common stock could decline.

The Company is a holding company and our only significant asset is our ownership interest in our subsidiaries and such ownership may not be sufficient to pay dividends or make distributions or loans to enable us to pay any dividends on the Common Stock or satisfy the Company’s other financial obligations, including taxes.

The Company is a holding company with no material assets other than its ownership of our subsidiaries. As a result, the Company has no independent means of generating revenue or cash flow. The Company’s ability to pay taxes and pay dividends will depend on the financial results and cash flows of our subsidiaries and the distributions we receive from our subsidiaries. Deterioration in the financial condition, earnings or cash flow of our subsidiaries for any reason could limit or impair our subsidiaries’ ability to pay such distributions. Additionally, to the extent that the Company needs funds and our subsidiaries are restricted from making such distributions under applicable law or regulation or under the terms of any financing arrangements, or our subsidiaries are otherwise unable to provide such funds, it could materially adversely affect the Company’s liquidity and financial condition.

Dividends on the Common Stock, if any, will be paid at the discretion of the Board, which will consider, among other things, the Company’s business, operating results, financial condition, current and expected cash needs, plans for expansion and any legal or contractual limitations on its ability to pay such dividends. Financing arrangements may include restrictive covenants that restrict the Company’s ability to pay dividends or make other distributions to its stockholders. In addition, the Company is generally prohibited under Delaware law from making a distribution to stockholders to the extent that, at the time of the distribution, after giving effect to the distribution, liabilities of the Company (with certain exceptions) exceed the fair value of its assets. If our subsidiaries do not have sufficient funds to make distributions, the Company’s ability to declare and pay cash dividends may also be restricted or impaired.

The Charter provides that the Court of Chancery of the State of Delaware will be the sole and exclusive forum 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.

The Charter provides that unless we consent in writing to the selection of an alternative forum, the (a) Court of Chancery (the “Chancery Court”) of the State of Delaware (or, in the event that the Chancery Court does not have jurisdiction, the federal district court for the District of Delaware or other state courts of the State of Delaware) shall, to the fullest extent permitted by law, be the sole and exclusive forum for: (i) any derivative action or proceeding brought on behalf of the Company, (ii) any action, suit or proceeding asserting a claim of breach of a fiduciary duty owed by any current or former director, officer or other employee, agent or stockholder of the Company to the Company or to the Company's stockholders, (iii) any action, suit or proceeding asserting a claim against the Company, its current or former directors, officers, or employees, agents or stockholders arising pursuant to any provision of the DGCL or our Charter or Bylaws, or (iv) any action, suit or proceeding asserting a claim against the Company, its current or former directors, officers, or employees, agents or stockholders governed by the internal affairs doctrine; and (b) subject to the foregoing, the federal district courts of the United States of America shall be the exclusive forum for the resolution of any complaint asserting a cause of action arising under the Securities Act. Notwithstanding the foregoing, such forum selection provisions shall not apply to suits brought to enforce any liability or duty created by the Exchange Act or any other claim for which the federal courts of the United States have exclusive jurisdiction. The choice of forum provision 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 such lawsuits against us and our directors, officers, and other employees. Alternatively, if a court were to find the choice of forum provision contained in the Charter to be inapplicable or unenforceable in an action, we may incur additional costs associated with resolving such action in other jurisdictions, which could harm our business, results of operations, and financial condition.

Additionally, Section 22 of the Securities Act creates concurrent jurisdiction for federal and state courts over all suits brought to enforce any duty or liability created by the Securities Act or the rules and regulations thereunder. As noted above, the Charter will provide that the federal district courts of the United States of America shall have jurisdiction over any action arising under the Securities Act. Accordingly, there is uncertainty as to whether a court would enforce such provision. Our stockholders will not be deemed to have waived our compliance with the federal securities laws and the rules and regulations thereunder.

The Company's operating results and other operating metrics may fluctuate significantly from period to period, which could lead to a decline in the trading price of our Common Stock.

The Company's operating results and other operating metrics have fluctuated in the past and may fluctuate in the future as a result of a number of factors, including variations in the Company's operating performance or the performance of the Company's competitors, changes in accounting principles, fluctuations in the price and supply of raw materials, fluctuations in the selling prices of the Company's products, research analyst reports about the Company, the Company's competitors or the Company's industry, the Company's inability to meet analysts' projections or guidance, strategic decisions by Company or the Company's competitors, such as acquisitions, capital investments or changes in business strategy, adverse outcomes of litigation, changes in or uncertainty about economic conditions, industry trends, geographies, or customers, activism by any large stockholder or group of stockholders, speculation by the investment community regarding the Company's business, actual or anticipated growth rates relative to the Company's competitors, acts of terrorism, natural disasters (including as a result of climate change), changes in consumer preferences and market trends, seasonality, the Company's ability to retain and attract customers, the Company's ability to manage inventory and fulfillment operations, and other factors described elsewhere in this risk factors section. Fluctuations in the Company's operating results due to these factors or for any other reason could cause the market price of the Common Stock to decline. In addition, the stock markets have experienced price and volume fluctuations that have affected and continue to affect the market price of equity securities issued by many companies. In the past, some companies that have had volatile market prices for their securities have been subject to class action or derivative lawsuits. The filing of a lawsuit against the Company, regardless of the outcome, could have a negative effect on the Company's business, financial condition and results of operations, as it could result in substantial legal costs and a diversion of management's attention and resources, and require the Company to make substantial payments to satisfy judgments or to settle litigation.

The Company's board of directors and management have significant control over the Company's business.

As of December 31, 2023, the Company's directors and executive officers beneficially owned, directly or indirectly, in the aggregate, approximately 30,238,755 shares of Common Stock, representing an aggregate of approximately 51.5% of the combined voting power of the Company's outstanding capital stock (excluding any options or other securities exercisable for Common Stock). As a result, in addition to their day-to-day management roles, the Company's executive officers and directors are able to exercise significant influence on the Company's business as stockholders, including influence over election of members of the board of directors and the authorization of other corporate actions requiring stockholder approval.

The Company's issuance of additional securities in connection with financings, acquisitions, investments, our equity incentive plans or otherwise would dilute all other stockholders.

The Company may issue additional capital stock in the future. Any such issuance would result in dilution to all other stockholders. In the future, the Company may issue additional stock, including as a grant of equity awards to employees, directors and consultants under our equity incentive plans, to raise capital through equity financings or to acquire or make investments in companies, products or technologies for which we may issue equity securities to pay for such acquisition or investment. Any such issuances of additional capital stock may cause stockholders to experience significant dilution of their ownership interests and the per share value of Common Stock to decline.

The Company's board of directors has the ability to issue blank check preferred stock, which may discourage or impede acquisition efforts or other transactions.

The Company's board of directors has the power, subject to applicable law, to issue series of preferred stock that could, depending on the terms of the series, impede the completion of a merger, tender offer or other takeover attempt. For instance, subject to applicable law, a series of preferred stock may impede a business combination by including class voting rights, which would enable the holder or holders of such series to block a proposed transaction. The Company's board of directors will make any determination to issue shares of preferred stock based on its judgment as to our and our stockholders' best interests. The Company's board of directors, in so acting, could issue shares of preferred stock having terms which could discourage an acquisition attempt or other transaction that some, or a majority, of the stockholders may believe to be in their best interests or in which stockholders would have received a premium for their stock over the then-prevailing market price of the stock.

Item 1B. Unresolved Staff Comments.

None.

Item 1C. Cybersecurity.

The Company prioritizes the security of its information systems and data integrity. We have developed a cybersecurity strategy, underpinned by our Cybersecurity Incident Response Plan, to manage and mitigate potential cybersecurity risks. Our strategy is designed to safeguard our systems and data.

Cybersecurity Risk Management and Strategy

The Company's cybersecurity framework encompasses a proactive approach towards potential threats, focusing on prevention, detection, response, and recovery. Our cybersecurity risk management program is integrated into our overall risk management framework and shares common reporting channels and governance processes that apply across the risk management framework to other legal, compliance, strategic, operational, and financial risk areas. Our cybersecurity risk management program includes:

- Risk assessments designed to help identify material cybersecurity risks to our critical systems, information, products, services, and our broader enterprise IT environment;
- a cybersecurity team principally responsible for managing (1) our cybersecurity risk assessment processes, (2) our security controls, and (3) our response to cybersecurity incidents;
- the use of external service providers and software, where appropriate, to monitor, assess, test or otherwise assist with aspects of our security controls;
- cybersecurity awareness training for our employees; and
- a global incident response plan that includes procedures for responding to cybersecurity incidents.

Our Incident Response Team ("IRT"), which includes members from various functional areas within the Company, including our data center operations, software, internal information systems, customer support, legal, and marketing departments, which are responsible for managing and mitigating any cybersecurity incidents at the

Company. This team operates under the policy procedures that are outlined in our Cybersecurity Incident Response Plan.

Our experienced information technology management team has over 50 years of experience in the technology industry and play pivotal roles in incident identification, analysis, and response. This process includes notifying executive management when a cybersecurity breach or incident takes place, and taking necessary containment and mitigation steps to address the incident. Our comprehensive approach is designed to provide minimal impact on our operations and maintain the confidentiality and integrity of the personal information we handle.

Regular penetration testing, conducted by independent firms, forms a crucial part of our risk assessment process. These tests help us identify and mitigate potential vulnerabilities in our network security and data handling practices. Additionally, the Company monitors alerts and advisory statements from the Cybersecurity and Infrastructure Security Agency to keep abreast of relevant threats, vulnerabilities or alerts from actual incidents.

Governance and Oversight

Cybersecurity governance at the Company involves executive and Board oversight. Our Board of Directors considers cybersecurity risks as part of its risk oversight function and has delegated to the Audit Committee oversight of cybersecurity and other information technology risks. The Audit Committee regularly receives updates from management on our cybersecurity risks. In addition, management updates the Audit Committee, as necessary, regarding any material cybersecurity incidents, as well as any incidents with lesser impact potential. The Audit Committee reports to the full Board of Directors regarding its activities, including those related to cybersecurity.

As part of the escalation procedures stated in our Cybersecurity Incident Response Plan, if we become aware that a cybersecurity incident has occurred, our information technology professionals shall notify the CEO and CFO immediately upon recognition of the breach or event, to help ensure high-level involvement and decision-making. The CEO and CFO shall assess the overall impact of the event and its potential impact on the Company's business operations. If deemed significant, the Audit Committee and full Board of Directors shall be informed of the incident.

Our cybersecurity policies and practices are regularly reviewed and updated in order to align with evolving threats and regulatory requirements to help ensure the Company complies with relevant laws and regulations and proactively manages cybersecurity risks.

Employee Training and Awareness

Recognizing the importance of human factors in cybersecurity, the Company invests in employee training and awareness programs. Our efforts are particularly focused on common threats like phishing attacks, and we are planning to introduce a comprehensive cybersecurity awareness and prevention program beginning in 2024.

Third-Party Service Providers

We work with third parties from time to time that help us identify, assess, and manage cybersecurity risks, including professional services firms, consulting firms, threat intelligence service providers, and penetration testing firms.

To operate our business, we utilize certain third-party service providers to perform a variety of functions. We seek to engage reliable, reputable service providers that maintain cybersecurity programs. Depending on the nature of the services provided, the sensitivity and quantity of information processed, and the identity of the service provider, our vendor management process may include reviewing the cybersecurity practices of such provider, contractually imposing obligations on the provider, conducting security assessments, and conducting periodic reassessments during their engagement.

Additional Information

We have not identified any known cybersecurity threats, including as a result of prior cybersecurity incidents, that have materially affected or are reasonably likely to materially affect us, including our operations, business strategy, results of operations, or financial condition. However, there can be no assurance that our cybersecurity risk management program and processes, including our policies, controls, or procedures, will be fully implemented, complied with or effective in protecting our systems and information. Refer to "Item 1A. Risk Factors", including the risk factors that are described under the heading "Cybersecurity and Information Technology Risks," for more information regarding the risks we face from cybersecurity incidents that could adversely impact our business and operations, harm our reputation and subject us to claims or litigation.

Item 2. Properties.

Our corporate headquarters is located in Campbell, California, consisting of approximately 26,227 square feet of office, testing and product design space. The lease expires in April 2025.

In addition to our corporate headquarters, we also lease office and sales support spaces in China, Israel, Thailand, Taiwan, Philippines, Australia, and Italy for our subsidiaries and local offices.

We outsource all manufacturing to contract manufacturers and currently do not own or lease any manufacturing facilities.

We believe that our existing properties are sufficient and suitable for the conduct of our business for the foreseeable future. To the extent our needs change as our business grows, we expect that additional space and facilities will be available.

Item 3. Legal Proceedings.

The information required by this Item is provided under "Commitments & Contingencies," in Note 10 to Consolidated Financial Statements included in Item 8 of this Annual Report on Form 10-K and is incorporated herein by reference.

Item 4. Mine Safety Disclosures.

Not applicable.

PART II

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

Market Information

Our Common Stock is traded on Nasdaq Stock Market, where prices are quoted under the symbol "TYGO".

Holders of Record

As of March 15, 2024, there were 123 holders of record of our Common Stock. The actual number of holders of our Common Stock is greater than the number of record holders and includes holders of our Common Stock whose shares of Common Stock are held in street name by brokers and other nominees.

Dividends

We have not paid any cash dividends on our Common Stock to date. We anticipate that we will retain all of our future earnings, if any, for use in the operation and expansion of our business and do not anticipate paying cash dividends in the foreseeable future. The payment of cash dividends in the future is dependent upon our revenues and earnings, if any, capital requirements, the terms of any indebtedness, general financial condition, the provisions of Delaware law affecting the payment of dividends and distributions to stockholders and any other factors or considerations the Board of Directors deems relevant. The payment of any cash dividends will be within the discretion of the Board at such time. The Board is not currently contemplating, and does not anticipate declaring any, stock dividends in the foreseeable future.

Recent Sales of Unregistered Securities

Except as otherwise disclosed in the Company's registration statement on Form S-1, dated June 22, 2023, as amended on July 25, 2023, and current reports on Form 8-K, we did not issue any equity securities during the year ended December 31, 2023 that were not registered under the Securities Act of 1933, as amended.

Stock Performance Graph

As a "smaller reporting company" as defined by Rule 12b-2 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), the Company is not required to provide the information required under this Item.

Item 6. [Reserved].

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

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with the section of this Annual Report on Form 10-K captioned "Business" and our consolidated financial statements and the related notes to those statements included elsewhere in this Form 10-K. In addition to historical data, this discussion contains forward-looking statements about our business, results of operations, cash flows, financial condition and prospects based on current expectations that involve risks, uncertainties and assumptions. Our actual results could differ materially from such forward-looking statements. Factors that could cause or contribute to those differences include, but are not limited to, those identified below and those discussed in the sections titled "Risk Factors" and "Cautionary Note Regarding Forward-Looking Statements" included elsewhere in this Annual Report on Form 10-K. Additionally, our historical results are not necessarily indicative of the results that may be expected for any period in the future.

Business Overview and 2023 Full Year Results

Our mission is to deliver smart systems solutions, combining hardware and software, that enhance safety, increase energy yield, and lower operating costs of residential, commercial, and utility-scale solar systems. We believe we are a worldwide leader in the development and delivery of products and solutions that are flexible and dependable, increase the energy generation of solar energy systems and address the need for change. We primarily offer products and services through distributors and solar installers. We have a worldwide footprint with product installations in over 100 countries and on all seven continents.

Further information regarding our business is provided in "Part 1, Item 1. Business" of this Annual Report on Form 10-K.

Acquisition of Foresight Energy Ltd.

On January 25, 2023 ("Acquisition Closing Date"), Legacy Tigo completed the acquisition of 100% of the equity interests of Foresight Energy Ltd. ("fSight"). Total consideration paid for the acquisition was approximately $13.7 million, which consisted of 5.6 million shares of Legacy Tigo's common stock (which represents 1.3 million shares of Common Stock on an as-converted basis as a result of the Business Combination) issued at the Acquisition Closing Date, 0.7 million shares of Legacy Tigo's common stock (which represents 0.2 million shares of Common Stock on an as-converted basis as a result of the Business Combination) to be issued 12 months from the Acquisition Closing Date and 0.4 million shares of Legacy Tigo's common stock (which represents 0.1 million shares of Common Stock on an as-converted basis as a result of the Business Combination) to be issued 18 months from the Acquisition Closing Date, in addition to $0.5 million in relation to a loan that was issued by the Company to fSight prior to the acquisition closing, and was deemed settled immediately following the Acquisition Closing Date. The transaction was accounted for as a business combination pursuant to Financial Accounting Standards Board ("FASB") *Accounting Standards Codification ("ASC") Topic 805, Business Combinations*, using the acquisition method of accounting.

fSight is an energy data analytics software company based in Had HaSharon, Israel. Legacy Tigo's acquisition of fSight is expected to expand its ability to leverage energy consumption and production data for solar energy producers, adding a powerful prediction platform that provides rich and actionable system performance data, from the grid down to the module level. See Note 4, "Acquisition of Foresight Energy, Ltd.," of the notes to the consolidated financial statements included in Part 2, Item 8 of this Annual Report on Form 10-K for additional information.

The Business Combination

On December 5, 2022, Roth CH Acquisition IV Co., a Delaware corporation ("ROCG"), Roth IV Merger Sub Inc., a Delaware corporation and a wholly-owned subsidiary of ROCG ("Merger Sub"), and Legacy Tigo, entered into an Agreement and Plan of Merger, as amended on April 6, 2023 (the "Merger Agreement"), pursuant to which, among other transactions, on May 23, 2023 (the "Closing Date"), Merger Sub merged with and into Legacy Tigo (the "Merger"), with Legacy Tigo surviving the Merger as a wholly-owned subsidiary of ROCG (the Merger, together with the other transactions described in the Merger Agreement, the "Business Combination"). In connection with the closing of the Business Combination, ROCG changed its name to "Tigo Energy, Inc."

Under the terms of the Merger Agreement, immediately prior to the effective time of the Business Combination (the "Effective Time"), Legacy Tigo (i) caused each share of Legacy Tigo preferred stock issued and outstanding to be automatically converted into a number of shares of Legacy Tigo common stock (the "Legacy Tigo common stock") in accordance with Legacy Tigo's charter (the "preferred stock conversion") and (ii) used reasonable best efforts to cause the "cashless" exercise of Legacy Tigo warrants (each, a "Legacy Tigo warrant"), in accordance with their terms, for Legacy Tigo common stock (the "warrant exercise"). As of the closing date of the Business Combination, all holders of Legacy Tigo have exercised such warrants for shares of Legacy Tigo common stock.

Pursuant to the Merger Agreement, at the Effective Time, each share of Legacy Tigo common stock issued and outstanding immediately prior to the Closing (including shares of Legacy Tigo common stock issued in the preferred stock conversion and warrant exercise prior to the closing but excluding shares owned by Legacy Tigo or any direct or indirect wholly owned subsidiary of Legacy Tigo as treasury stock, shares owned by ROCG, and shares of Legacy Tigo common stock issued and outstanding immediately prior to the Effective Time held by a holder who has not voted in favor of adoption of the Merger Agreement or consented thereto in writing and who is entitled to demand and has properly exercised appraisal rights of such shares in accordance with Section 262 of the Delaware General Corporation Law (as it may be amended from time to time, the "DGCL") and otherwise complied with all of the provisions of the DGCL relevant to the exercise and perfection of dissenters' rights) were canceled and converted into the right to receive 0.233335 shares of common stock, par value $0.0001 per share, of the Company (the "Common Stock").

At the Effective Time, each outstanding Legacy Tigo stock option (each, a "Legacy Tigo stock option"), whether vested or unvested, converted into an option to purchase a number of shares of Common Stock equal to the product of (x) the number of shares of Legacy Tigo common stock underlying such Legacy Tigo stock option immediately prior to the Closing and (y) 0.233335, at an exercise price per share equal to (A) the exercise price per share of Legacy Tigo common stock underlying such Legacy Tigo stock option immediately prior to the Closing divided by (B) 0.233335.

At the Effective Time, after giving effect to the warrant exercise, each outstanding Legacy Tigo warrant to purchase Legacy Tigo common stock, whether or not exercisable, converted into a warrant to purchase a number of shares of Common Stock equal to the product of (x) the number of shares of Legacy Tigo common stock underlying such Legacy Tigo warrant immediately prior to the Closing and (y) 0.233335.

Upon consummation of the Business Combination, the separate corporate existence of Merger Sub ceased, and Legacy Tigo survived the Business Combination and became a wholly-owned subsidiary of ROCG (also herein after referred to as the "Combined Company"). In connection with the consummation of the Business Combination, the Combined Company was renamed "Tigo Energy, Inc." Immediately after giving effect to the Business Combination, there were 58,144,543 issued and outstanding shares of New Tigo common stock.

Accounting Impact of the Business Combination

The Business Combination was accounted for as a reverse recapitalization in accordance with accounting principles generally accepted in the United States of America ("GAAP"). Under the guidance in *ASC Topic 805, "Business Combinations"*, ROCG, which is the legal acquirer, was treated as the "acquired" company for financial reporting purposes and Legacy Tigo was treated as the accounting acquirer. This determination was primarily based on the following:

(i) Legacy Tigo having a majority of the voting power of the Combined Company;
(ii) Legacy Tigo's senior management comprising substantially all of the senior management of the Combined Company;
(iii) Legacy Tigo's relative size compared to ROCG; and
(iv) Legacy Tigo's operations comprising the ongoing operation of the post-combination company.

Accordingly, for accounting purposes, the Business Combination was treated as the equivalent of a capital transaction in which we are issuing stock for the net assets of ROCG. The net assets of ROCG were stated at historical cost, with no goodwill or other intangible assets recorded. Operations prior to the Business Combination will be the Company's.

The most significant change in the Company's financial position and results upon consummation of the business combination is the conversion of the convertible preferred stock into common stock and additional paid in capital (as compared to the Company's consolidated balance sheet as of December 31, 2022).

Subsequent to the Business Combination, the Combined Company is an SEC-registered and Nasdaq-listed company. The Company has hired and expects to hire additional staff and implement new processes and procedures to address public company requirements in anticipation of and following the completion of the Business Combination. The Company also has incurred and expects to incur substantial additional expenses for, among other things, directors' and officers' liability insurance, director fees, internal control compliance, and additional costs for investor relations, accounting, audit, legal and other functions.

Common Stock Warrant Redemption

In connection with the Business Combination, we assumed 5,750,000 Public Warrants and 18,750 Private Warrants, which, in each case, entitled the holder to purchase one share of Common Stock at an exercise price of $11.50 per share. Except with respect to certain registration rights and transfer restrictions, the Private Warrants are identical to the Public Warrants. On August 9, 2023, we announced the redemption of all outstanding Public Warrants and Private Warrants to purchase shares of Common Stock that were issued under the Warrant Agreement Under the terms of the Warrant Agreement, we were entitled to redeem all outstanding Warrants for $0.01 per Warrant if the reported closing price of our Common Stock was at least $18.00 per share on each of twenty trading days within a thirty trading day period ending on the third trading day prior to the date on which a notice of redemption is given. This performance threshold was achieved following the market close on August 4, 2023. A total of 324,546 Warrants were exercised through September 8, 2023, resulting in proceeds, net of issuance costs, of $3.7 million. All other Warrants were redeemed on September 8, 2023. We paid $0.1 million for the remaining Warrants that were not exercised as of September 8, 2023, which was recorded as a reduction to additional paid-in capital on our consolidated balance sheet.

Key Factors that May Influence Future Results of Operations

Our financial results of operations may not be comparable from period to period due to several factors. Key factors affecting our results of operations are summarized below.

Demand for Products. The demand for our products in Europe and the United States experienced a notable slowdown beginning in the second quarter of 2023. In Europe, the slowdown was primarily attributable to a decrease in customer purchases in the second half of 2023 primarily due to an overall surplus in the inventory channel. Additionally, there has been uncertainty surrounding the net energy metering policies and solar export penalties in the European markets, such as Germany, Belgium, Italy and the United Kingdom, which also contributed to the overall slowdown in demand in Europe. In the United States, the slowdown was primarily attributable due to higher interest rates than recent prior periods and the transition from NEM 2.0 to NEM 3.0 in California. The factors noted above have led to elevated inventory levels with distributors and installers in both regions. Given these factors, revenues may to continue to be adversely affected into 2024.

In response to the factors noted above, we reduced staffing levels across all geographies in December 2023 by approximately 15% to better align our cost structure with the current environment. As a result, we expect to reduce cash expenditures by approximately $3.8 million in 2024.

Unfavorable Macroeconomic and Market Conditions. The global macroeconomic and market uncertainty, including higher interest rates and inflation, has caused disruptions in financial markets and may continue to have an adverse effect on the U.S. and world economies. Starting in the second quarter of 2023 and continuing throughout the year, we experienced a significant number of customer requests to delay purchase order deliveries to the fourth quarter of 2023 or early 2024, in addition to a smaller number of unanticipated purchase order cancellations and returns. Other customers may decide to delay purchasing our products and services or not purchase at all. A tighter credit market for consumer and business spending could, in turn, adversely affect spending levels of installers and end users and lead to increased price competition for our products. Reductions in customer spending in response to unfavorable or uncertain macroeconomic and market conditions, globally or in a particular region where we operate, have adversely affected, and could continue to adversely affect our business, results of operations and financial condition.

Managing Supply Chain. We rely on contract manufacturers and suppliers to produce our components. Our ability to grow depends, in part, on the ability of our contract manufacturers and suppliers to provide high quality services and deliver components and finished products on time and at reasonable costs. While we have diversified our supply chain, some of our suppliers and contract manufacturers are sole-source suppliers. Our concentration of suppliers could lead to supply shortages, long lead times for components and supply changes. A significant portion of our supply chain originates in Thailand and China. In the event we are unable to mitigate the impact of delays and/or price increases in raw materials, electronic components and freight, it could delay the manufacturing and delivery of our products, which would adversely impact our cash flows and results of operations, including revenue and gross margin. In addition, in a slowing economic environment, our inventory levels may continue to increase due to existing purchase commitments and our ability to negotiate volume pricing discounts may be impaired.

Expansion of Sales with Existing Customers and Adding New Customers. Our future revenue growth is, in part, dependent on our ability to expand product offerings and services in the U.S. residential market. In our North American market, revenue is generally generated from our product offerings and services in the C&I markets. In order to continue growth of revenues, we plan to expand our presence in the residential market through offerings with residential solar providers. We also expect to continue to evaluate and invest in new market opportunities internationally. We believe that our entry into new markets will continue to facilitate revenue growth and customer diversification. We primarily acquire new customers through collaboration with our industry partners and distributors. While we expect that a substantial portion of our future revenues in the near-term will be generated from our existing customers, we expect to invest in our sales and marketing to broaden reach with new residential customers in the U.S. and customers in EMEA.

Expansion of New Products and Services. We have made substantial investments in research and development and sales and marketing to achieve a leading position in our market and grow revenues. Our revenue is primarily generated from the sales and offerings of our MLPE systems. While we will continue to invest in research and development to expand the capabilities of our existing products and solutions, we intend to continue the development and promotion of our GO ESS product line, including the introduction of the GO ESS EV Charger that launched in the German market in January 2024. We generated revenues from our GO ESS product offerings of $13.4 million and $3.2 million in the years ended December 31, 2023 and 2022, respectively.

Key Operating and Financial Metrics

We regularly review a number of metrics, including the following key operating and financial metrics, to evaluate our business, measure our performance, identify trends in our business, prepare financial projections and make strategic decisions. The Company believes the operating and financial metrics presented are useful in evaluating our operating performance, as they are similar to measures used by our public competitors and are regularly used by security analysts, institutional investors, and other interested parties in analyzing operating performance and prospects.

The following tables sets forth these metrics for the periods presented:

	Year Ended December 31,		Increase/(Decrease)	
(in thousands, except percentages)	**2023**	**2022**	**Amount**	**Percent**
Net revenue	$ 145,233	$ 81,323	$ 63,910	78.6 %
Gross profit	$ 51,309	$ 24,771	$ 26,538	107.1 %
Gross margin	35.3 %	30.5 %	4.9 %	n/a
Operating loss	$ (8,275)	$ (896)	$ (7,379)	823.5 %
Net loss	$ (984)	$ (7,037)	$ 6,053	(86.0)%

Gross Profit and Gross Margin

We define gross profit as total net revenue less cost of revenue, and define gross margin, expressed as a percentage, as the ratio of gross profit to revenue. Gross profit and margin can be used to understand our financial performance and efficiency and allow investors to evaluate its pricing strategy and compare it against competitors. We use these metrics to make strategic decisions identifying areas for improvement, set targets for future performance and make informed decisions about how to allocate resources going forward.

Key Components and Comparison of Results of Operations

Net Revenue

We generate revenue primarily through the sale of our hardware products, complemented by our web-based monitoring services and SaaS platform, Predict+. Our revenue model is structured around the delivery of fully functional hardware products at the time of shipment, requiring no further modification for customer use. These products are sold mainly to distributors who then resell to end users, with our revenue recognition practices ensuring that revenue is recognized when control of the products is transferred to the customer.

Our revenue is influenced by changes in the sales volume of our products and services, market supply and demand, promotional incentives and the offerings of our competitors. The growth of our revenue is dependent on the following factors:

- our ability to grow our sales with existing customers and the addition of new customers in current and new markets;
- our ability to expand upon our current product and service offerings;
- our ability to manage our supply chain effectively;
- our ability to sustain our market competitiveness through cost efficiency and continuous innovation in our technology;
- our ability to navigate macroeconomic trends and the global regulatory environment; and
- our capability to consistently promote our product and service portfolio, thereby enhancing our brand visibility and establishing a distinct market position.

Years ended December 31, 2023 and 2022

	Year Ended December 31,		Increase/(Decrease)	
(in thousands, except percentages)	**2023**	**2022**	**Amount**	**Percent**
Net revenue	$ 145,233	$ 81,323	$ 63,910	78.6 %

Net revenue increased by $63.9 million or 78.6% for the year ended December 31, 2023, as compared to the same period in 2022, primarily due to higher sales volumes as a result of increased acceptance of our products in the marketplace in the first half of 2023 and increased marketing activities. The increase in net revenues was partially offset in the second of half of 2023, when the solar industry experienced a broad-based slowdown in both the U.S. and European markets, that resulted in elevated inventory with distributors and installers, and as a result the overall demand for our products and services decreased as distributors and installers responded to this slower demand environment. In the United States, this slowdown was primarily the result of higher interest rates and the transition from NEM 2.0 to NEM 3.0 in California. In Europe, this slowdown was primarily the result of a decrease in customer purchases after a surge of sales were realized in 2022 and going into the first half of 2023 due to higher energy prices in Europe related to the onset of the armed conflict in Ukraine in 2022, and overall channel inventory correction.

	Year Ended December 31,		Increase/(Decrease)	
(in thousands, except percentages)	**2023**	**2022**	**Amount**	**Percent**
EMEA	$ 109,301	$ 52,016	$ 57,285	110.1 %
Americas	25,171	22,456	2,715	12.1 %
APAC	10,761	6,851	3,910	57.1 %
Total net revenue	$ 145,233	$ 81,323	$ 63,910	78.6 %

- EMEA – Net revenue for the EMEA region increased by $57.3 million or 110.1% for the year ended December 31, 2023, as compared to the same period in 2022, increased in the first half of 2023 primarily due to an overall increase in demand for cost-effective energy solutions as energy costs across the region have increased due to the higher energy prices caused by the armed conflict in Ukraine. The level of demand slowed going into the second half of 2023 due to elevated inventory levels at distributors and installers.
- Americas – Net revenue for the Americas region increased $2.7 million or 12.1% for the year ended December 31, 2023, as compared to the same period in 2022, primarily due to increased orders for our

MLPE and GO ESS product lines during the first half of 2023. During the second half of 2023, demand for our solutions slowed primarily due to higher interest rates impacting customers' investment decisions and the transition from NEM 2.0 to NEM 3.0 in California.

- APAC – Net revenue for the APAC region increased $3.9 million or 57.1% for the year ended December 31, 2023, as compared to the same period in 2022, primarily due to increased orders for our MLPE product line throughout 2023.

Cost of Revenues and Gross Profit

Our cost of revenues consists primarily of product costs, warranty costs, and logistics costs, as well as inventory write-downs, shipping and handling costs, hosting service costs related to the monitoring service, and depreciation and amortization of manufacturing test equipment. We outsource our manufacturing to third-party contract manufacturers and negotiate product pricing on a quarterly basis. Our product costs are affected by advancement of technology in both our hardware and services, economies of scale resulting in lower component costs, and improvements in our overall manufacturing and production processes.

Key components of our logistics supply channel consist of third-party distribution centers in the U.S., Europe, and China. Finished goods are either shipped to our customers directly from our contract manufacturers or shipped to third-party distribution centers and then distributed to our customers.

Gross profit may fluctuate from one reporting period to the next as the components of net revenue and cost of revenue are affected by market price fluctuations whose changes impact our average selling prices, product cost, product mix, customer mix, warranty costs and freight costs.

	Year Ended December 31,		Increase/(Decrease)	
(in thousands, except percentages)	**2023**	**2022**	**Amount**	**Percent**
Cost of revenue	$ 93,924	$ 56,552	$ 37,372	66.1 %
Gross profit	$ 51,309	$ 24,771	$ 26,538	107.1 %

Years ended December 31, 2023 and 2022

Cost of revenue increased by $37.4 million or 66.1% for the year ended December 31, 2023, as compared to the same period in 2022, primarily due to a 68.5% increase in MLPE product sales for the year ended December 31, 2023 compared to the same period in 2022.

Gross profit increased by $26.5 million or 107.1% for the year ended December 31, 2023, as compared to the same period in 2022, primarily due to cost reduction efforts on certain products and lower freight costs in the last three quarters of 2023.

Operating Expenses

Operating expenses consist of research and development, sales and marketing and general and administrative expenses. Personnel-related costs are the most significant component of each of these expense categories and include salaries, benefits, payroll taxes, sales commissions, incentive compensation and stock-based compensation. Refer below for further details on the separate components of operating expenses.

Research and Development

Research and development expenses consistent of personnel-related expenses and facility-related expenses. Research and development employees are primarily engaged in the design and development of our MLPE and GO ESS solutions. We devote substantial resources to research and development programs that focus on enhancements to, and cost efficiencies in, our existing products or services and timely development of new products and services that utilize technological innovation to drive down product costs, improve functionality and enhance reliability. We intend to continue to invest appropriate resources in our research and development efforts because we believe they are critical to maintaining our competitive position.

(in thousands, except percentages)	Year Ended December 31,				Increase/(Decrease)		
	2023		2022		Amount		Percent
Research and development	$	9,496	$	5,682	$	3,814	67.1 %
Percentage of net revenue		6.5 %		7.0 %			

Years ended December 31, 2023 and 2022

Research and development expense increased by $3.8 million or 67.1% for the year ended December 31, 2023, as compared to the same period in 2022. The overall increase was primarily driven by an increase in personnel-related expenses resulting from a 25.9% increase in headcount, in addition to an increase in professional fees primarily related to consultant expense. Research and development expense as percentage of net revenue decreased to 6.5% for the year ended December 31, 2023, compared to 7.0% for the same period in 2022. The amount of research and development expenses may fluctuate from period to period due to differing levels and stages of development activity.

Sales and Marketing

Sales and marketing expenses consist primarily of personnel-related expenses, as well as advertising, travel, trade shows, marketing, customer support and other indirect costs. We expect to continue to make the necessary investments to enable us to execute our strategy to increase our market penetration geographically and enter into new markets by expanding our customer base of distributors.

(in thousands, except percentages)	Year Ended December 31,				Increase/(Decrease)		
	2023		2022		Amount		Percent
Sales and marketing	$	21,281	$	10,953	$	10,328	94.3 %
Percentage of net revenue		14.7 %		13.5 %			

Years ended December 31, 2023 and 2022

Sales and marketing expense increased by $10.3 million or 94.3% for the year ended December 31, 2023, as compared to the same period in 2022. The increase was primarily due to higher personnel-related expenses resulting from an 11.9% increase in headcount, in addition to an increase in travel and entertainment related expenses primarily due to attending additional tradeshows in 2023 compared to 2022.

General and Administrative

General and administrative expense consist primarily of personnel-related expenses for our executive, finance, human resources, information technology and legal organizations, facilities costs, and fees for professional services. Fees for professional services consist primarily of outside legal, accounting and information technology consulting costs.

(in thousands, except percentages)	Year Ended December 31,				Increase/(Decrease)		
	2023		2022		Amount		Percent
General and administrative	$	28,807	$	9,032	$	19,775	218.9 %
Percentage of net revenue		19.8 %		11.1 %			

Years ended December 31, 2023 and 2022

General and administrative expense increased by $19.8 million or 218.9% for the year ended December 31, 2023, as compared to the same period in 2022. The increase was primarily related to an increase in personnel-related expenses due to a 64.3% increase in headcount, an increase in facility-related costs, an increase in allowance for credit losses on certain aged receivable balances, an increase in professional fees, incremental increases associated with non-capitalizable merger related consulting expenses incurred in in connection with the Business Combination, an increase in legal expense associated with the Merger and Business Combination, and an increase in insurance related expenses primarily due to additional director and officer insurance.

Other (Income) Expenses, Net

Other (income) expenses, net, primarily consist of interest income earned on our cash and short term investments, realized gains and losses on short-term and long-term marketable securities, interest expense and fees under our convertible note, non-cash interest expense related to the amortization of debt issuance costs, and non-cash charges recognized for the change in fair value of our convertible notes embedded derivative, and convertible preferred stock warrants and losses or gains on debt extinguishment. Refer below for further details on the separate components of other (income) expenses, net.

	Year Ended December 31,		Increase/(Decrease)	
(in thousands)	**2023**	**2022**	**Amount**	**Percent**
Change in fair value of preferred stock warrant and contingent shares liability	$ (1,109)	$ 1,020	$ (2,129)	(208.7)%
Change in fair value of derivative liability	(12,247)	—	(12,247)	100.0%
Loss on debt extinguishment	171	3,613	(3,442)	(95.3)%
Interest expense	8,115	1,494	6,621	443.2%
Interest income	(2,322)	(199)	(2,123)	1,066.8%
Other (income) expense, net	(37)	142	(179)	(126.1)%
Total other (income) expenses, net	$ (7,429)	$ 6,070	$ (13,499)	(222.4)%

Years ended December 31, 2023 and 2022

Change in fair value of preferred stock warrant and contingent shares liability decreased by $2.1 million or 208.7% for the year ended December 31, 2023, as compared to the same period in 2022, primarily due to an increase in the fair value of the Series C convertible preferred stock and the incremental increase contributed from the contingent shares related to the fSight acquisition. The Series C convertible preferred stock was converted to shares of Common Stock on May 23, 2023, as part of the Business Combination. See Note 3, "Merger with Roth CH Acquisition IV Co.," of the notes to consolidated financial statements included in Part II, Item 8 of this Annual Report on Form 10-K for additional information.

Change in fair value of derivative liability was an incremental increase of $12.2 million for the year ended December 31, 2023, as compared to the same period in 2022. The Convertible Promissory Note contained conversion options that met the requirements for separate accounting and is accounted for as a convertible note derivative liability. The derivative instrument was recorded at fair value upon recognition on the Merger Date and was subject to remeasurement at the end of the reporting period. On September 24, 2023, we entered into the Convertible Note Amendment (as defined below) with L1 Energy (as defined below) to modify the conversion terms of the Convertible Promissory Note and, as a result of such amendment, the conversion options no longer meet the requirements to be bifurcated in accordance with *ASC Topic 815, "Derivatives and Hedging"*. The convertible note derivative liability was remeasured immediately prior to the execution of the Convertible Note Amendment. The carrying value of the convertible note derivative liability was reclassified to equity and was recorded into additional paid-in capital on our consolidated balance sheet. See Note 6, "Fair Value of Financial Instruments" and Note 9, "Long-Term Debt," of the notes to consolidated financial statements included in Part II, Item 8 of this Annual Report on Form 10-K for additional information.

The loss on debt extinguishment for the year ended December 31, 2023, is primarily related to the repayment of our Series 2022-1 Notes. The loss on debt extinguishment during the year ended December 31, 2022, was related to the repayment of our Senior Bonds.

Interest expense for the year ended December 31, 2023, primarily consists of interest expense and the amortization of deferred debt issuance costs incurred on our Convertible Promissory Note. Interest expense for the year ended December 31, 2022, primarily consists of interest expense primarily related to our Series 2022-1 Notes.

Interest income for the year ended December 31, 2023 increased by $2.1 million primarily due to the Company's marketable securities which were purchased in the second quarter of 2023.

Liquidity and Capital Resources

As of December 31, 2023, our principal sources of liquidity were cash and cash equivalents and marketable securities of $33.2 million, which were held primarily for working capital purposes. As of December 31, 2023 and 2022, our working capital, which we define as current assets less current liabilities, increased $32.8 million to $78.3 million from $45.5 million as of December 31, 2022. The increase in working capital during 2023 is primarily attributable to higher inventory. During the second half of 2023, we experienced a significant decline in sales activity compared to the first half of 2023 due to an industry-wide inventory oversupply, higher interest rates and governmental changes to net metering programs in the U.S. and Europe. While we have been actively working on reducing our inventory levels, these efforts were constrained by short-term purchase commitments in place during the year. The substantial majority of these commitments have been fulfilled as of December 31, 2023 and we expect lower inventory levels and positive working capital cash conversion in 2024. We believe that our cash position is sufficient to meet our capital and liquidity requirements for at least the next 12 months from the date of this Annual Report on Form 10-K.

In the future, our ability to sustain operations and invest in new technologies may necessitate seeking additional equity or debt financing. Our capital needs will be influenced by several factors, including our revenue growth rate, the success of our future product development and capital investments, and the timing and extent of spending to support further sales and marketing and research and development efforts. In addition, we have incurred and expect to continue to incur additional costs as a result of operating as a public company. In the event that additional financing is required from outside sources, we cannot be certain that any additional financing will be available to us on acceptable terms, or at all. If we are required but unable to raise additional capital or generate cash flows to sustain or expand our business, our business, operating results, and financial condition could be adversely affected.

Convertible Note. As of December 31, 2023, our Convertible Note obligation was $50.0 million. Upon conversion of the Convertible Note due in 2026, we will pay cash or issue shares of common stock equal to the aggregate principal amount of the Convertible Note to be converted. Refer to Note 9, in Part II, Item 8 of this Annual Report on Form 10-K for more information on our outstanding Convertible Note.

Operating Leases. We have entered into various non-cancelable operating leases primarily for our facilities with original lease periods expiring through the year 2029, with our most significant leases relating to our facilities in Campbell, California and Ra’anana, Israel. As of December 31, 2023, we had total lease obligations of $2.6 million recorded on our consolidated balance sheet.

Cash Flows

The following table summarizes our cash flows for the periods presented:

	Year Ended December 31,	
(in thousands, except percentages)	**2023**	**2022**
Net cash used in operating activities	$ (37,222)	$ (16,472)
Net cash used in investing activities	(30,914)	(1,603)
Net cash provided by financing activities	34,824	48,318
Net (decrease) increase in cash, cash equivalents and restricted cash	$ (33,312)	$ 30,243

Management closely monitors expenditures and is focused on obtaining new customers and continuing to develop our products. Cash from operations and our liquidity could also be affected by various risks and uncertainties, including, but not limited to, economic concerns related to interest rates, inflation or the supply chain, including timing of cash collections from customers and other risks which are detailed in the section entitled “Risk Factors” in Part I, Item 1A to this Annual Report on Form 10-K.

Cash Flows Used in Operating Activities

Operating cash flows consists primarily of net loss adjusted for certain non-cash items and changes in operating assets and liabilities. Cash used in operating activities increased by $20.8 million in the year ended December 31, 2023, as compared to the same period in 2022. The increase in cash used in operating activities was driven primarily by inventory purchases. During the first half of 2023, we placed purchase commitments with our manufacturing partners at anticipated levels that were higher than needed to fulfill actual sales volumes in the second half of 2023, which led to increased inventory purchases of $22.2 million.

Cash Flows Used in Investing Activities

Net cash used in investing activities increased by $29.3 million for the year ended December 31, 2023, compared to the same period in 2022, primarily due to the purchase of marketable securities and property and equipment. This was partially offset by an increase in cash provided by the proceeds from the sale and maturities of a portion of the marketable securities.

Cash Flows Provided by Financing Activities

Net cash provided by financing activities decreased by $13.5 million for the year ended December 31, 2023, compared to the same period in 2022. For the year ended December 31, 2023, we received proceeds of $50.0 million from the Convertible Promissory Note, proceeds of $3.7 million from the redemption of the common stock warrants, and proceeds of $2.2 million from the Merger (as defined above), which was partially offset by the $20.8 million repayment of the Series 2022-1 Notes.

For the year ended December 31, 2022, we received proceeds of $41.0 million from the sale of Series E convertible preferred stock and proceeds of $25.0 million from the Series 2022-1 Notes. This was partially offset by the $10.0 million repayment of our Senior Bonds (as defined above), $3.5 million of payments due to financing costs, and $4.2 million in repayment of the Series 2022-1 Notes.

Off-Balance Sheet Arrangements

During the periods presented, we did not have any off-balance sheet arrangements.

Critical Accounting Estimates

The preparation of our audited consolidated financial statements and related notes requires us to make judgments, estimates and assumptions that affect the reported amounts of assets, liabilities, revenue and expenses, and related disclosure of contingent assets and liabilities.

We have based our estimates on historical experience and on various other assumptions that are believed to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates due to risks and uncertainties, including uncertainty in the current economic environment due to the global impact of inflation, interest rate fluctuations, new regulations, and geopolitical conflicts in Ukraine and Israel. As of the date of issuance of these financial statements, we are not aware of any specific event or circumstance that would require us to update our estimates, judgments or revise the carrying value of our assets or liabilities. For a description of our significant accounting policies, see Note 2. “Summary of Significant Accounting Policies,” in Part II, Item 8 of this Annual Report on Form 10-K. An accounting policy is considered to be critical if it requires an accounting estimate to be made based on assumptions about matters that are highly uncertain at the time the estimate is made, and if different estimates that reasonably could have been used, or changes in the accounting estimates that are reasonably likely to occur periodically, could materially impact the consolidated financial statements. We believe the following critical accounting policies reflect the more significant estimates and assumptions used in the preparation of our consolidated financial statements.

Inventory, net

Our inventories are comprised of sellable finished goods, raw materials bought on behalf of our contract manufacturers, and defective units returned under our warranty policy.

Sellable finished goods and raw material inventories are valued at the lower of cost or net realizable value, based on the first-in, first-out (“FIFO”) method. Certain factors could affect the realizable value of our inventories, including market and economic conditions, technological changes, existing product changes (mainly due to cost reduction activities) and new product introductions. We consider historic usage, expected demand, anticipated sales price, the effect of new product introductions, product obsolescence, and other factors when evaluating the net realizable value of inventories. Inventory write-downs are equal to the difference between the cost of inventories and their estimated net realizable value. Inventory write downs are recorded as cost of revenues in the accompanying consolidated statements of operations and comprehensive loss.

We do not believe that there is a reasonable likelihood that there will be a material change in future estimates or assumptions that we use to record inventory at the lower of cost or net realizable value. However, if estimates regarding customer demand are inaccurate or changes in technology affect demand for certain products in an unforeseen manner, we may be exposed to potential losses.

See Note 2 and Note 8 to the consolidated financial statements included in Part II, Item 8 of this Annual Report on Form 10-K for additional information related to inventory valuation.

Product Warranties

We provide a standard limited product warranty for our solar products against defects in materials and workmanship under normal use and service conditions. Our standard warranty period is 25 years for our MLPE devices, 12.5 years for our inverters, and 11 years for our batteries. Other products are sold with standard limited warranties that typically range in duration from five to ten years. In certain cases, customers can purchase an extended warranty for our battery storage products and for our batteries for PV applications that extend the standard warranty period. In addition, customers in the United States can purchase extended warranties for inverters that extend the warranty period for an additional 25 years.

Our products are designed to meet the warranty periods and our reliability procedures cover component selection, design, accelerated life cycle tests, and end-of-manufacturing line testing. However, since our history in selling MLPE devices, batteries, inverters and other hardware is shorter than the warranty period, the calculation of warranty provisions is inherently uncertain.

We accrue estimated warranty costs at the time of sale based on anticipated warranty claims and actual historical warranty claims experience. Warranty provisions, computed on a per-unit sold basis, are based on our best estimate of such costs and are included in our cost of revenues. The warranty obligation is determined based on actual and predicted failure rates of the products, cost of replacement and service and delivery costs incurred to correct a defective product. Our warranty obligation requires management to make assumptions regarding estimated failure rates and replacement costs. If actual warranty costs differ significantly from these estimates, adjustments may be required in the future, which could adversely affect our gross profit and results of operations. Warranty obligations are classified as short-term and long-term warranty obligations, based on the period in which the warranty is expected to be claimed. The product warranty liability (short and long-term) was $5.6 million and $4.4 million, in the year ended December 31, 2023 and 2022, respectively.

See Note 2 to the consolidated financial statements included in Part II, Item 8 of this Annual Report on Form 10-K for additional information related to product warranty.

Impairment of Long-Lived Assets and Intangibles

The Company reviews its long-lived assets, which consists of property and equipment and operating lease right-of-use assets, for impairment when specific triggering events or changes in circumstances indicate the carrying amount of an asset may not be recoverable. Recoverability of assets held and used is measured by comparison of the carrying amount of an asset to future undiscounted cash flows expected to be generated by the asset. If such assets are considered to be impaired, the impairment to be recognized is measured by the amount by which the carrying amount of the assets exceeds the fair value of the assets. Assets to be disposed of are reported at the lower of their carrying cost amount or fair value less cost to sell. No impairment losses were identified for the years ended December 31, 2023 and 2022.

We evaluate the recoverability of finite-lived intangible assets for impairment at least annually, we conduct our analysis in the fourth quarter of each year, or whenever there are triggering events or circumstances that may indicate the carrying amount of such assets may not be recoverable. The evaluation is performed at the lowest level for which identifiable cash flows are largely independent of the cash flows of other assets and liabilities. Recoverability of these assets is measured by a comparison of the carrying amounts to the future undiscounted cash flows the assets are expected to generate. If such review indicates that the carrying amount of intangible assets is not recoverable, the carrying amount of such assets is reduced to fair value. No impairment losses were identified for the years ended December 31, 2023 and 2022.

Acquired identifiable finite-lived intangible assets are amortized on a straight-line basis over the estimated useful lives of the assets. We believe the basis of amortization approximates the pattern in which the assets are utilized, over their estimated useful lives. We routinely review the remaining estimated useful lives of finite-lived intangible assets. In case we reduce the estimated useful life assumption for any asset, the remaining unamortized balance is amortized or depreciated over the revised estimated useful life.

The valuation of long-lived assets and finite-lived intangible assets inherently involves a degree of uncertainty, particularly as it relates to the Company's future undiscounted cash flows and performance. In the second half of 2023, the Company saw a decrease in cash flow generation primarily due to the Company being affected by an industry-wide inventory oversupply, higher interest rates, and other macroeconomic trends. These considerations were factored into the 2023 annual analysis, and we did not believe this has led to impairment of long-lived assets or finite-lived intangible assets, as of the assessment date. If these macroeconomic trends, noted above, persists into 2024, there is a possibility that the Company may record impairment charges against these assets. The Company closely monitors these conditions and is prepared to perform interim impairment tests, as applicable, should there be indications of triggering events leading to impairment.

See Note 2, 8 and 14 to the consolidated financial statements included in Part II, Item 8 of this Annual Report on Form 10-K for additional information related to long-lived assets and intangibles.

Goodwill

Goodwill represents the excess of the purchase price over the identifiable tangible and intangible assets acquired in addition to liabilities assumed arising from the acquisition of fSight.

Goodwill is not amortized and is tested for impairment at least on an annual basis. The goodwill impairment test is performed according to the following principles:

1. An initial qualitative assessment may be performed to determine whether it is more likely than not that the fair value of the reporting unit is less than its carrying amount;
2. If the Company concludes it is more likely than not that the fair value of the reporting unit is less than its carrying amount, a quantitative fair value test is performed. An impairment charge for the amount by which the carrying amount exceeds the reporting unit's fair value is recognized.

As the Company operates as a single reporting unit, with a straightforward business model, the Company used the market approach to estimate the fair value of the reporting unit. The market approach allows the use of the market price of an individual equity security at the assessment date to calculate the fair value of the reporting unit. The Company used the closing stock price at the date of assessment to calculate our fair value. As the Company is considered one reporting unit, we used the consolidated balance sheet to derive the carrying amount of the reporting unit, with the inclusion of goodwill.

We complete the required annual testing of goodwill impairment for the reporting unit in the fourth quarter of each year to determine if goodwill should be impaired. During the year ended December 31, 2023, no impairment of goodwill has been identified. For the annual test impairment test that was conducted in the fourth quarter of 2023, fair value exceeded the carrying value by 64.7%.

The valuation of goodwill inherently involves a degree of uncertainty, particularly as it relates to the Company's stock price and the calculation of the Company's fair value. Throughout 2023, the Company's stock price has decreased primarily due to the performance of the Company being affected by an industry-wide inventory oversupply, higher interest rates, and other macroeconomic trends. Additionally, should the Company's share price continue to decline, reflecting broader industry or economic concerns, this could indicate a decline in the fair value of the reporting unit, potentially leading to an impairment of goodwill. The Company closely monitors these conditions and is prepared to perform interim impairment tests should there be indications that the fair value of the reporting unit may have declined below its carrying amount.

See Note 2 and 14 to the consolidated financial statements included in Part II, Item 8 of this Annual Report on Form 10-K for additional information related to goodwill.

Business Combinations

Assets acquired and liabilities assumed as part of a business acquisition are generally recorded at their fair value at the date of acquisition. The excess of purchase price over the fair value of assets acquired and liabilities assumed is recorded as goodwill. Determining fair value of identifiable assets, particularly intangibles, and liabilities acquired also requires us to make estimates, which are based on all available information and in some cases assumptions with respect to the timing and amount of future revenues and expenses associated with an asset. We utilized multiple valuation methods to include the Multi-Period Excess Earnings Method, Distributor Method and the Replacement Costs method to develop the fair value of intangibles.

Accounting for business acquisitions requires us to make judgments as to whether a purchase transaction is a multiple element contract, meaning that it includes other transaction components. This judgment and determination affect the amount of consideration paid that is allocable to assets and liabilities acquired in the business purchase transaction. Additional information existing as of the acquisition date but unknown to us may become known during the remainder of the measurement period, not to exceed 12 months from the acquisition date, which may result in changes to the amounts and allocations recorded.

Our estimates of fair value are based upon assumptions we believe to be reasonable at that time, but which are inherently uncertain and unpredictable. As a result, actual results may differ from estimates.

See Note 2 and 4 to the consolidated financial statements included in Part II, Item 8 of this Annual Report on Form 10-K for additional information related to our business combination.

Income Taxes

Income taxes are accounted for under the asset-and-liability method as required by ASC Topic 740, *Income Taxes* ("ASC Topic 740"). Deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases and operating loss and tax credit carryforwards. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period corresponding to the enactment date.

Valuation Allowance

We establish an income tax valuation allowance when available evidence indicates that it is more likely than not that all or a portion of a deferred tax asset will not be realized. In assessing the need for a valuation allowance, we consider the amounts and timing of expected future deductions or carryforwards and sources of taxable income that may enable utilization. We maintain an existing valuation allowance until enough positive evidence exists to support its reversal. Changes in the amount or timing of expected future deductions or taxable income may have a material impact on the level of income tax valuation allowances. Our assessment of the realizability of the deferred tax assets requires judgment about our future results. Inherent in this estimation is the requirement for us to estimate future book and taxable income and possible tax planning strategies. These estimates require us to exercise judgment about our future results, the prudence and feasibility of possible tax planning strategies, and the economic environment in which we do business. It is possible that the actual results will differ from the assumptions and require adjustments to the allowance. Adjustments to the allowance would affect future net income.

As of December 31, 2023, our net DTA balance on a consolidated basis was $21,000, after reduction of a valuation allowance of $24.3 million. Significant domestic DTAs were generated, primarily due to net operating losses, research and development tax credits, along with capitalized expenditures including research and development. We assessed the ability to realize the benefits of our DTAs in each reporting period by evaluating all available positive and negative evidence, objective and subjective in nature, including, but not limited to, (1) cumulative results of operations in recent years, (2) sources of recent pre-tax income, (3) estimates of future taxable income, (4) respective carryback and/or carryforward periods of tax attributes available to date, and (5) limitation on NOL utilization against taxable income. We measured our current DTA balances against estimates of future income based on objectively verifiable operating results from our recent history, and concluded that sufficient future taxable income will not be generated to realize the benefits of our federal, state and certain foreign DTAs. Therefore, the Company continues to maintain a valuation allowance against our domestic and certain foreign net deferred tax assets.

Uncertain Tax Positions

The Company follows ASC Topic 740 that prescribes a financial statement recognition threshold and measurement process for uncertain tax positions taken or expected to be taken on our income tax returns. We recognize income tax benefits from uncertain tax positions only if we believe that it is more likely than not that the tax position will be sustained upon examination by the taxing authorities based on the technical merits of the position. We include interest and penalties related to unrecognized tax benefits within income tax expense in the accompanying consolidated statements of operations.

The calculation of our current provision for income taxes involves the use of estimates, assumptions and judgments while taking into account current tax laws, interpretation of current tax laws and possible outcomes of future tax audits. We have established reserves to address potential exposures related to tax positions that could be challenged by tax authorities. Although we believe our estimates, assumptions and judgments to be reasonable, any changes in tax law or interpretation of tax law and the resolutions of potential tax audits could significantly impact the amounts provided for income taxes in our consolidated financial statements.

See Note 2 and 15 to the consolidated financial statements included in Part II, Item 8 of this Annual Report on Form 10-K for additional information related to income taxes.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk.

As a "smaller reporting company" as defined by Rule 12b-2 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), the Company is not required to provide the information required under this Item.

Item 8. Financial Statements and Supplementary Data.

TABLE OF CONTENTS TO CONSOLIDATED FINANCIAL STATEMENTS

Report of Independent Registered Public Accounting Firm

To the stockholders and the Board of Directors of Tigo Energy, Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheet of Tigo Energy, Inc. and subsidiaries (collectively the "Company") as of December 31, 2023, the related consolidated statements of operations and comprehensive loss, convertible preferred stock and changes in stockholders' equity (deficit), and cash flows for the year then ended, and the related notes (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2023, and the results of its operations and its cash flows for the year then ended, in conformity with accounting principles generally accepted in the United States of America.

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 audit. 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 U.S. Securities and Exchange Commission and the PCAOB.

We conducted our audit 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 audit, 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 audit 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 consolidated financial statements. Our audit also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audit provides a reasonable basis for our opinion.

/s/ Deloitte & Touche LLP

San Jose, California
March 21, 2024

We have served as the Company's auditor since 2023.

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of Tigo Energy, Inc.
Campbell, California

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheet of Tigo Energy, Inc. and Subsidiaries (collectively the “Company”) as of December 31, 2022, and the related consolidated statements of operations, convertible preferred stock and changes in stockholders’ deficit, and cash flows for the year then ended, and the related notes (collectively referred to as the “consolidated financial statements”). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2022, and the results of its operations and its cash flows for the year then ended, in conformity with accounting principles generally accepted in the United States of America.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company’s management. Our responsibility is to express an opinion on the Company’s consolidated financial statements based on our audit. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (the “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 U.S. Securities and Exchange Commission (the “SEC”) and the PCAOB.

We conducted our audit 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 consolidated financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audit, 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 audit included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audit also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audit provides a reasonable basis for our opinion.

/s/ Frank, Rimerman + Co. LLP
We have served as the Company’s auditor from 2013 to 2023.
San Francisco, California

March 10, 2023, except for the effects of the reverse recapitalization, including the net loss per share, discussed in Note 3 and 5, as to which the date is March 21, 2024.

TIGO ENERGY, INC. AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS
(In thousands, except per share data)

	As of	
	December 31, 2023	**December 31, 2022**
ASSETS		
Current assets		
Cash and cash equivalents	$ 4,405	$ 36,194
Restricted cash	—	1,523
Marketable securities, short-term	26,806	—
Accounts receivable, net of allowance for credit losses of $4,011 and $76 at December 31, 2023 and December 31, 2022, respectively	6,862	15,816
Inventory, net	61,401	24,915
Deferred issuance costs	—	2,221
Notes receivable	—	456
Prepaid expenses and other current assets	5,236	3,967
Total current assets	104,710	85,092
Property and equipment, net	3,458	1,652
Operating right-of-use assets	2,503	1,252
Marketable securities, long-term	1,977	—
Intangible assets, net	2,192	—
Deferred tax assets, net	21	—
Other assets	707	82
Goodwill	12,209	—
Total assets	$ 127,777	$ 88,078
LIABILITIES, CONVERTIBLE PREFERRED STOCK AND STOCKHOLDERS' EQUITY (DEFICIT)		
Current liabilities		
Accounts payable	$ 15,685	$ 23,286
Accrued expenses and other current liabilities (Note 8)	8,681	4,382
Deferred revenue, current portion	335	950
Warranty liability, current portion	526	392
Operating lease liabilities, current portion	1,192	578
Current maturities of long-term debt	—	10,000
Total current liabilities	26,419	39,588
Warranty liability, net of current portion	5,106	3,959
Deferred revenue, net of current portion	466	172
Long-term debt, net of current maturities and unamortized debt issuance costs (Note 9)	31,570	10,642
Operating lease liabilities, net of current portion	1,392	762
Preferred stock warrant liability	—	1,507
Total liabilities	64,953	56,630
Convertible preferred stock, $0.0001 par value		
Convertible preferred stock: 10,000,000 and 47,484,663 shares authorized; zero and 46,467,565 shares issued and outstanding at December 31, 2023 and December 31, 2022, respectively	—	87,140
Commitments and Contingencies (Note 10)		
Stockholders' equity (deficit)		
Common stock, $0.0001 par value: 150,000,000 and 60,667,100 shares authorized, respectively; 58,751,666 and 5,469,921 shares issued and outstanding at December 31, 2023 and December 31, 2022, respectively	6	1
Additional paid-in capital	138,657	6,522
Accumulated deficit	(75,780)	(62,215)
Accumulated other comprehensive loss	(59)	—
Total stockholders' equity (deficit)	62,824	(55,692)
Total liabilities, convertible preferred stock and stockholders' equity (deficit)	$ 127,777	$ 88,078

See accompanying notes to consolidated financial statements.

TIGO ENERGY, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF OPERATIONS AND COMPREHENSIVE LOSS
(In thousands, except per share data)

	Year Ended December 31,	
	2023	2022
Net revenue	$ 145,233	$ 81,323
Cost of revenue	93,924	56,552
Gross profit	51,309	24,771
Operating expenses:		
Research and development	9,496	5,682
Sales and marketing	21,281	10,953
General and administrative	28,807	9,032
Total operating expenses	59,584	25,667
Loss from operations	(8,275)	(896)
Other (income) expenses, net:		
Change in fair value of preferred stock warrant and contingent shares liability	(1,109)	1,020
Change in fair value of derivative liability	(12,247)	—
Loss on debt extinguishment	171	3,613
Interest expense	8,115	1,494
Interest income	(2,322)	(199)
Other (income) expense, net	(37)	142
Total other (income) expenses, net	(7,429)	6,070
Loss before income tax expense	(846)	(6,966)
Income tax expense	138	71
Net loss	(984)	(7,037)
Other comprehensive loss:		
Unrealized loss resulting from change in fair value of marketable securities	$ (59)	$ —
Total comprehensive loss	$ (1,043)	$ (7,037)
Net loss	$ (984)	$ (7,037)
Cumulative dividends on convertible preferred stock	(3,399)	(6,344)
Net loss attributable to common stockholders	$ (4,383)	$ (13,381)
Loss per common share		
Basic	$ (0.08)	$ (2.71)
Diluted	$ (0.14)	$ (2.71)
Weighted-average common shares outstanding		
Basic	38,048,516	4,940,562
Diluted	43,223,134	4,940,562

See accompanying notes to consolidated financial statements.

TIGO ENERGY, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CONVERTIBLE PREFERRED STOCK AND CHANGES IN STOCKHOLDERS' EQUITY (DEFICIT)
(In thousands, except share data)

	Convertible preferred stock		Stockholders' (deficit) equity						
			Common stock			Notes			
	Shares [1]	Amount	Shares [1]	Amount	Additional paid-in capital	receivable from related parties	Accumulated deficit	Accumulated other comprehensive loss	Total stockholders' (deficit) equity
Balance at December 31, 2021	165,578,120	$ 46,370	20,580,109	$ 2	$ 5,383	$ (103)	$ (55,178)	$ —	$ (49,896)
Retroactive application (Note 3)	(126,942,949)	—	(15,778,049)	(1)	1	—	—	—	—
Balance at December 31, 2021, as converted	38,635,171	46,370	4,802,060	1	5,384	(103)	(55,178)	—	(49,896)
Issuance of common stock upon exercise of stock options	—	—	667,861	—	325	—	—	—	325
Stock-based compensation expense	—	—	—	—	813	—	—	—	813
Proceeds from sale of Series E, net of issuance costs	7,832,394	40,770	—	—	—	—	—	—	—
Forgiveness of recourse note to purchase common stock	—	—	—	—	—	103	—	—	103
Net loss	—	—	—	—	—	—	(7,037)	—	(7,037)
Balance at December 31, 2022, as converted	46,467,565	$ 87,140	5,469,921	$ 1	$ 6,522	$ —	$ (62,215)	$ —	$ (55,692)
Issuance of common stock upon exercise of stock options	—	—	433,906	—	215	—	—	—	215
Stock-based compensation expense	—	—	—	—	3,808	—	—	—	3,808
Issuance of common stock in connection with the acquisition of fSight	—	—	1,306,385	—	10,077	—	—	—	10,077
Purchase price adjustment in connection with the fSight acquisition	—	—	—	—	898	—	—	—	898
Forfeitures of restricted stock and restricted stock surrendered in lieu of withholding taxes	—	—	(11,832)	—	(91)	—	—	—	(91)
Convertible preferred stock dividends	1,258,055	—	—	—	12,581	—	(12,581)	—	—
Issuance of preferred stock upon exercise of preferred warrants	193,372	—	—	—	2,008	—	—	—	2,008
Conversion of convertible preferred stock into common stock in connection with the Business Combination (Note 3)	(47,918,992)	(87,140)	47,918,992	5	87,135	—	—	—	87,140
Issuance of common stock upon exercise of common warrants	—	—	1,491,229	—	—	—	—	—	—
Issuance of common stock upon Business Combination	—	—	1,818,519	—	573	—	—	—	573
Issuance of common stock upon exercise of common stock warrants, net of issuance costs and payments to warrant holders of non-redeemed warrants	—	—	324,546	—	3,653	—	—	—	3,653
Reclassification of convertible note derivative liability to equity	—	—	—	—	11,278	—	—	—	11,278
Unrealized loss resulting from change in fair value of marketable securities	—	—	—	—	—	—	—	(59)	(59)
Net loss	—	—	—	—	—	—	(984)	—	(984)
Balance at December 31, 2023	—	$ —	58,751,666	$ 6	$ 138,657	$ —	$ (75,780)	$ (59)	$ 62,824

(1) The shares of the Company's common and redeemable convertible preferred stock prior to the Business Combination (as defined in Note 1) have been retroactively restated to reflect the exchange ratio of approximately 0.233335 established in the Business Combination as described in Note 3.

See accompanying notes to consolidated financial statements.

TIGO ENERGY, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS
(In thousands)

	Year Ended December 31, 2023	Year Ended December 31, 2022
Cash Flows from Operating activities:		
Net loss	$ (984)	$ (7,037)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	1,106	562
Reserve for inventory obsolescence	713	123
Change in fair value of preferred stock warrant and contingent shares liability	(1,109)	1,020
Change in fair value of derivative liability	(12,247)	—
Deferred tax benefit	(21)	—
Non-cash interest expense	5,473	256
Stock-based compensation	3,808	813
Allowance for credit losses	3,870	596
Loss on debt extinguishment	171	3,613
Non-cash lease expense	996	535
Forgiveness of recourse promissory note and accrued interest	—	117
Accretion of interest on marketable securities	(508)	—
Loss on disposal of property and equipment	17	—
Changes in operating assets and liabilities:		
Accounts receivable	5,201	(12,533)
Inventory	(37,199)	(14,969)
Prepaid expenses and other assets	(1,272)	(2,459)
Accounts payable	(8,577)	10,890
Accrued expenses and other liabilities	3,383	952
Deferred revenue	(321)	673
Warranty liability	1,281	958
Deferred rent	—	(135)
Operating lease liabilities	(1,003)	(447)
Net cash used in operating activities	$ (37,222)	$ (16,472)
Investing activities:		
Purchase of marketable securities	(53,483)	—
Cash invested in note receivable	—	(456)
Acquisition of fSight	(16)	—
Purchase of intangible assets	(450)	—
Purchase of property and equipment	(2,114)	(1,147)
Sales and maturities of marketable securities	25,149	—
Net cash used in investing activities	$ (30,914)	$ (1,603)
Financing activities:		
Proceeds from Convertible Promissory Note	50,000	25,000
Repayment of Series 2022-1 Notes	(20,833)	(4,165)
Repayment of Senior Bonds	—	(10,000)
Payment of financing costs	(358)	(3,473)
Proceeds from sale of Series E convertible preferred stock	—	40,978
Proceeds from Business Combination	2,238	—
Proceeds from exercise of stock options	215	325
Payment of tax withholdings on stock options	(91)	—
Payment of deferred issuance costs related to the Merger	—	(139)
Payment of issuance costs related to the sale of Series E convertible preferred stock	—	(208)
Proceeds from common stock warrant redemption, net of issuance costs and payments to warrant holders of non-redeemed warrants	3,653	—
Net cash provided by financing activities	$ 34,824	$ 48,318
Net (decrease) increase in cash and restricted cash	(33,312)	30,243
Cash, cash equivalents, and restricted cash at beginning of period	37,717	7,474
Cash, cash equivalents, and restricted cash at end of period	$ 4,405	$ 37,717

See accompanying notes to consolidated financial statements.

(in thousands)	Years Ended December 31, 2023	2022
Supplemental disclosure of cash flow information:		
Cash paid for interest	$ 1,418	$ 1,238
Cash paid for income taxes, net	95	109
Supplemental schedule of non-cash investing and financing activities:		
Financing costs in accounts payable and accrued expenses	—	2,082
Net assets acquired from Roth CH Acquisition IV Co.	573	—
Operating lease right of use assets obtained in exchange for operating lease liabilities	2,247	1,787
Property plant and equipment in accounts payable	693	135
Non-cash consideration paid for the acquisition of fSight	10,974	—
Contingent shares liability from fSight acquisition	2,167	—
Fair value of derivative note liability at issuance	23,525	—
Dividends on Series D and Series E convertible preferred stock (Note 3)	12,581	—
Reclassification of deferred issuance costs to additional paid in capital	2,221	—
Conversion of convertible preferred stock into common stock in connection with the Business Combination (Note 3)	87,140	—
Issuance of preferred stock upon exercise of preferred warrants	2,008	—
Unrealized loss resulting from change in fair value of marketable securities	(59)	—
Reclassification of convertible note derivative liability to equity	$ 11,278	$ —

See accompanying notes to consolidated financial statements.

TIGO ENERGY, INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. Nature of Operations

Tigo Energy, Inc. (f/k/a Roth CH Acquisition IV Co.) and subsidiaries (together, the “Company”) consists of Tigo Energy, Inc. (“Tigo”), its wholly-owned direct subsidiary: Tigo Energy MergeCo, Inc. (f/k/a Tigo Energy, Inc.) (“Legacy Tigo”), and its wholly-owned indirect subsidiaries: Tigo Energy Israel Ltd., Foresight Energy, Ltd. (“fSight”), Tigo Energy Italy SRL, Tigo Energy Systems Trading (Suzhou) and Tigo Energy Australia Pty Ltd. Prior to the consummation of the Business Combination (as defined below), the operations of the Company were conducted through Legacy Tigo. Legacy Tigo was incorporated in Delaware in 2007 and commenced operations in 2010.

The Company provides solar and energy storage solutions, including module level power electronics (“MLPE”) designed to maximize the energy output of individual solar modules, delivering more energy, active management, and enhanced safety for utility, commercial, and residential solar arrays. The Company is headquartered in Campbell, California with offices in Europe, Asia and the Middle East.

Entry into a Material Definitive Agreement

On December 5, 2022, Roth CH Acquisition IV Co., a Delaware corporation (“ROCG”), Roth IV Merger Sub Inc., a Delaware corporation and a wholly-owned subsidiary of ROCG (“Merger Sub”), and Legacy Tigo, entered into an Agreement and Plan of Merger, as amended on April 6, 2023 (the “Merger Agreement”), pursuant to which, among other transactions, on May 23, 2023 (the “Closing Date”), Merger Sub merged with and into Legacy Tigo (the “Merger”), with Legacy Tigo surviving the Merger as a wholly-owned subsidiary of ROCG (the Merger, together with the other transactions described in the Merger Agreement, the “Business Combination”). In connection with the closing of the Business Combination, ROCG changed its name to “Tigo Energy, Inc.”

Please refer to Note 3 “Merger with ROTH CH Acquisition IV Co.” for additional details regarding the Business Combination.

Basis of Presentation

The accompanying audited consolidated financial statements have been prepared in accordance with generally accepted accounting principles in the United States of America (“GAAP”). Any reference in these notes to applicable guidance is meant to refer to GAAP as found in the Accounting Standards Codification (“ASC”) and Accounting Standards Updates (“ASU”) promulgated by the Financial Accounting Standards Board (“FASB”).

Pursuant to the Business Combination, the merger between ROCG and Legacy Tigo was accounted for as a reverse recapitalization in accordance with U.S. GAAP (the “Reverse Recapitalization”). Under this method of accounting, ROCG was treated as the “acquired” company for financial reporting purposes. Accordingly, for accounting purposes, the Reverse Recapitalization was treated as the equivalent of Legacy Tigo issuing stock for the net assets of ROCG, accompanied by a recapitalization. The net assets of ROCG are stated at historical cost, with no goodwill or other intangible assets recorded. The consolidated assets, liabilities and results of operations prior to the Reverse Recapitalization are those of Legacy Tigo. The shares and corresponding capital amounts and earnings per share available for common stockholders, prior to the Business Combination, have been retroactively recasted as shares reflecting the exchange ratio established in the Business Combination. Please refer to Note 3 “Merger with ROTH CH Acquisition IV Co.” for additional details regarding the Business Combination.

The accompanying consolidated financial statements are presented in accordance with accounting principles generally accepted in the United States (“GAAP”). The consolidated financial statements include the accounts of the Company and its wholly-owned subsidiaries. All intercompany balances and transactions have been eliminated in consolidation.

The Company has determined the functional currency of the subsidiaries to be the U.S. dollar. The Company remeasures monetary assets and liabilities of its foreign operations at exchange rates in effect at the balance sheet date and nonmonetary assets and liabilities at their historical exchange rates. Expenses are remeasured at the weighted-average exchange rates during the relevant reporting period. These remeasurement gains and losses are recorded in other (income) expense, net in the consolidated statements of operations and comprehensive loss and were not material for the years ended December 31, 2023 and 2022.

2. Summary of Significant Accounting Policies

Emerging Growth Company Status

The Company is an emerging growth company, as defined in the Jumpstart Our Business Startups Act of 2012 (JOBS Act). Under the JOBS Act, emerging growth companies can delay adopting new or revised accounting standards issued subsequent to the enactment of the JOBS Act, until such time as those standards apply to private companies. The Company has elected to use this extended transition period for complying with new or revised accounting standards that have different effective dates for public and private companies until the earlier of the date that it (i) is no longer an emerging growth company or (ii) affirmatively and irrevocably opts out of the extended transition period provided in the JOBS Act. As a result, these financial statements may not be comparable to companies that comply with the new or revised accounting pronouncements as of public company effective dates.

Use of Estimates

The preparation of the consolidated financial statements, in conformity with GAAP, requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, disclosure of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenue and expenses during the reporting period. Key estimates in the consolidated financial statements include revenue recognition, fair value of investments, allowance for credit allowances, inventory valuation, impairment of long-lived assets, fair value of acquired intangible assets and goodwill, useful lives of acquired intangible assets and property and equipment, product warrant liabilities, incremental borrowing rate for right-of-use assets and lease liability, and the valuation of the derivative liability, valuation allowance, income tax benefit (provision), preferred stock warrant liabilities and stock-based compensation, including the underlying fair value of the preferred and common stock. These estimates are based on information available as of the date of the financial statements; therefore, actual results could differ materially from those estimates due to risks and uncertainties.

Reclassification, Change in Presentation and Prior Year Omitted Disclosures

Certain prior period amounts in the consolidated financial statements and accompanying notes have been reclassified to conform to the current period’s presentation as follows. Customer deposits in previous periods were recorded in other accrued liabilities within the consolidated balance sheet. Customer deposits are now recorded in deferred revenue, current portion and deferred revenue, net of current portion within the consolidated balance sheet. The amount of customer deposits that was reclassified to deferred revenue, current portion on the Company's consolidated balance sheet as of December 31, 2022 was $0.9 million.

Disclosures including the roll-forward related to allowance for credit losses (refer to “*Accounts Receivable and Allowance for Credit Losses*” in this Note) and long-lived assets by geographic region (refer to “*Long-lived assets*” in Note 16) were omitted from our prior year financials for the year ended December 31, 2022. The disclosures have been included for the year ended December 31, 2023 and include the comparative period for the year ended December 31, 2022. Additionally, there was a change in presentation related to the disclosure for supplementary balance sheet information related to Inventory (refer to *“Inventory, net”* in Note 8) for the year-ended December 31, 2022 to net the inventory reserve against the individual inventory classes instead of separately disclosing the reserve balance. These adjustments had no impact on the consolidated balance sheets, statements of operations and comprehensive loss, or cash flows as there was no change in the amounts recorded. The Company has determined that these adjustments were immaterial both individually and in the aggregate.

Concentrations of Credit Risk

Financial instruments that potentially subject the Company to significant concentrations of credit risk consist of cash, marketable securities and accounts receivable. The Company maintains deposits in federally insured financial institutions, which, at times, may exceed federally insured limits. The Company believes it is not exposed to significant credit risk beyond the normal credit risk associated with commercial banking relationships as the Company’s cash and restricted cash are deposited with major financial institutions in the U.S., Europe, the Middle East and Asia. The Company does not believe it is exposed to any significant credit risk due to the high credit quality of the financial instruments in which the money is held. At December 31, 2023 and 2022, the Company held insignificant cash in foreign bank accounts. To date, the Company has not experienced any losses on its deposits of cash.

During the year ended December 31, 2023, there were no individual customers that exceeded 10% of the Company's annual net revenue. During the year ended December 31, 2022, there was one individual customer that exceeded 10% of the Company's annual net revenue. This customer accounted for 10.6% of annual net revenue. Accounts receivable from this customer represented 13.0% of the Company's total accounts receivable balance.

Segment Information

Operating segments are defined as components of an enterprise about which separate discrete information is available for evaluation by the chief operating decision maker ("CODM"), or decision-making group, in deciding how to allocate resources and in assessing performance. The CODM is the Company's Chief Executive Officer. The Company views and manages its operations as a single operating segment. Please refer to Note 16 "Segment and Geographic Information" for additional details.

Fair Value of Financial Instruments

The Company uses a three-level hierarchy, which prioritizes, within the measurement of fair value, the use of market-based information over entity-specific information for fair value measurement based on the nature of inputs used in the valuation of an asset or liability as of the measurement date. Fair value focuses on an exit price and is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The inputs or methodology used to estimate the fair value of financial instruments are not necessarily an indication of the risk associated with those financial instruments. The three-level hierarchy for fair value measurement is defined as follows:

- *Level 1:* Unadjusted quoted prices in active markets that are accessible at the measurement date for identical, unrestricted assets or liabilities.
- *Level 2:* Quoted prices in markets that are not active, or inputs which are observable, either directly or indirectly, for substantially the full term of the asset or liabilities.
- *Level 3:* Prices or valuation techniques that require inputs that are both significant to the fair value measurement and unobservable (i.e., supported by little or no market activity).

Management believes that the carrying amounts of the Company's financial instruments, including cash and cash equivalents, restricted cash, accounts receivable, accrued expenses and accounts payable approximate fair value due to the short-term nature of these instruments.

Cash and Cash Equivalents

The Company's cash and cash equivalents include short-term highly-liquid investments with an original maturity of 90 days or less when purchased and are carried at fair value in the accompanying consolidated balance sheets. The Company considers all highly-liquid investments with a remaining maturity of three months or less at the date of purchase to be cash. Cash consists primarily of amounts in checking and savings accounts.

Restricted Cash and Reconciliation to the Consolidated Statements of Cash Flows

Restricted cash represents amounts held on deposit at a commercial bank used to secure the Company's Senior Bonds for the year ended December 31, 2022. Please refer to Note 9 "Long-Term Debt" for additional details regarding the Company's Senior Bonds. The following table provides a reconciliation of the components of cash and cash equivalents and restricted cash reported in the Company's consolidated balance sheets to the total of the amount presented in the consolidated statements of cash flows:

(in thousands)	Year Ended December 31, 2023	2022
Cash and cash equivalents	$ 4,405	$ 36,194
Restricted cash	—	1,523
Cash, cash equivalents, and restricted cash at end of period presented in the consolidated statement of cash flows	$ 4,405	$ 37,717

Marketable Securities

The Company's marketable securities consist of investments in U.S. agency securities and corporate bonds that are classified as available-for-sale. The securities are carried at fair value with the unrealized gains and losses included in other comprehensive loss, a component of stockholders' equity (deficit). Realized gains, losses, and declines in value determined to be other than temporary are included in the Company's consolidated statements of operations and comprehensive loss. If any adjustment to fair value reflects a decline in the value of the investment that the Company considers to be "other than temporary," the Company reduces the investment to fair value through a charge to the consolidated statements of operations and comprehensive loss. No such adjustments were necessary during the periods presented.

Accounts Receivable and Allowance for Credit Losses

Accounts receivable are recorded at the invoiced amount, do not bear interest, and are typically due 30 days from the invoice date. The Company generally does not require collateral from its customers and maintains an allowance for anticipated credit losses inherent in its accounts receivable portfolio. In establishing the required allowance, management considers historical bad debts, current customer receivable balances, age of customer receivable balances and the customers' financial condition, all of which are subject to change. Additionally, the Company monitors activities and considers future reasonable and supportable forecasts of economic conditions to adjust all general and customer specific reserve percentages, as necessary. Balances recorded for estimated credit losses are written-off when they are determined to be uncollectible. The following table sets forth activities in the allowance for credit losses for the periods indicated:

(in thousands)	Year Ended December 31, 2023	2022
Allowance for credit losses, beginning balance	$ 76	$ 109
Net charges to expense or revenue	3,960	596
Write-offs, net of recoveries	(25)	(629)
Allowance for credit losses, ending balance	$ 4,011	$ 76

Inventory, net

In accordance with FASB ASU No. 2015-11, inventory is valued at the lower of cost or net realizable value ("NRV") with cost determined under the first-in, first-out ("FIFO") method. The determination of NRV involves numerous judgments, including estimated average selling prices based upon recent sales volumes, industry trends, existing customer orders, current contract price, future demand, pricing for the Company's products and technological obsolescence of the Company's products. Inventory that is obsolete, in excess of the Company's forecasted demand or is anticipated to be sold at a loss is written down to its NRV based on expected demand and selling prices.

Deferred Issuance Costs

The Company capitalizes costs that are directly associated with in-process equity financings until such financings are consummated, at which time such costs are recorded against the gross proceeds from the applicable financing. If a financing is abandoned, deferred financing costs are expensed immediately. The Company incurred $2.2 million in fees associated with the Merger, which are recognized as deferred issuance costs in the accompanying balance sheet at December 31, 2022. Deferred issuance costs associated with our debt financing are recorded as contra-liabilities within long-term debt, net of current maturities and unamortized debt issuance costs in the consolidated balance sheet. All amortization of deferred issuance costs is presented within the interest expense line in the consolidated statement of operations.

Property and equipment, net

Property and equipment is stated at cost, less accumulated depreciation. Cost includes amounts paid to acquire or construct the asset as well as any expenditure that substantially adds to the value of or significantly extends the useful life of an existing asset. Depreciation and amortization are computed using the straight-line method over the estimated useful lives of the assets, which ranges from 3 to 7 years. Leasehold improvements are amortized over the shorter of the lease term or expected useful life of the improvements.

Leases

The Company determines if an arrangement is or contains a lease at inception. Operating lease assets represent the Company’s right to use an underlying asset for the lease term and lease liabilities represent the Company’s obligation to make lease payments over the lease term.

Operating lease assets and liabilities are recognized based on the present value of the remaining lease payments discounted using the Company’s incremental borrowing rate. Operating lease assets also include initial direct costs incurred and prepaid lease payments, minus any lease incentives. The Company’s lease terms include options to extend or terminate the lease when it is reasonably certain that the Company will exercise that option. Lease expense is recognized on a straight-line basis over the lease term.

The Company combines the lease and non-lease components in determining the operating lease assets and liabilities. Additionally, for short-term leases with an initial lease term of 12 months or less and with purchase options the Company is not reasonably certain will be exercised, the Company elected to not record ROU assets or corresponding lease liabilities on the Company’s consolidated balance sheet.

Goodwill and Intangible Assets

Goodwill represents the excess of the purchase price over the identifiable tangible and intangible assets acquired in addition to liabilities assumed arising from the acquisition of fSight. Initially the Company measures goodwill based upon the value of the consideration paid plus or minus net assets assumed. The goodwill arising from the Company's acquisition is attributable to the value of the potential expanded market opportunity with new customers.

Intangible assets have either an identifiable or indefinite useful life. Intangible assets are recorded at cost or when acquired as part of a business combination at estimated fair value. Intangible assets with identifiable useful lives are amortized on a straight-line basis over their economic or legal life, whichever is shorter. The Company's amortizable intangible assets consist primarily of patents, developed technology, and customer relationships. The useful life of these intangible assets ranges from 6 to 10 years.

Goodwill is not amortized but is subject to annual impairment testing unless circumstances dictate more frequent assessments. The Company will perform an annual impairment assessment for goodwill and more frequently whenever events or changes in circumstances indicate that the fair value of the asset may be less than the carrying amount.

Long-Lived Assets

The Company reviews its long-lived assets, which consists of property and equipment, net and operating lease right-of-use assets, for impairment whenever events or changes in circumstances indicate the carrying amount of an asset may not be recoverable. Recoverability of assets held and used is measured by comparison of the carrying amount of an asset to future net cash flows expected to be generated by the asset. If such assets are considered to be impaired, the impairment to be recognized is measured by the amount by which the carrying amount of the assets exceeds the fair value of the assets. Assets to be disposed of are reported at the lower of their carrying cost amount or fair value less cost to sell. No impairment losses were identified for the years ended December 31, 2023 and 2022.

Customer Deposits

Customer deposits consist of deposits received by the Company, as required on certain contracts and agreements, which are refundable at the termination of the contract. Customer deposits are recorded in deferred revenue, current portion within the consolidated balance sheet. Please refer to the "Reclassification" section in this note for further clarification on the overall presentation of customer deposits in the Company's consolidated balance sheet as of December 31, 2022.

Product Warranties

The Company estimates the cost of its warranty obligations based on several key estimates: the warranty period (which vary from 5 to 25 years depending on the product), its historical experience of known product failure rates, use of materials to repair or replace defective products and parts, and service delivery costs incurred in correcting product failures. In addition, from time to time, specific warranty accruals may be made if unforeseen technical problems arise. Should the actual experience relative to these factors differ from the estimates, the Company may be required to record additional warranty reserves. Product warranty costs are recorded as expense to cost of revenue based on customer history, historical information and current trends.

The following table summarizes the changes in product warranty liability:

	Year Ended December 31,	
(in thousands)	**2023**	**2022**
Balance at the beginning of the period	$ 4,351	$ 3,393
Provision for warranty	1,702	1,149
Warranty usage	(421)	(191)
Balance at the end of the period	$ 5,632	$ 4,351

Convertible Promissory Note

On January 9, 2023, the Company entered into a convertible promissory note purchase agreement (the "Note Purchase Agreement") with L1 Energy Capital Management S.a.r.l ("L1 Energy") pursuant to which the Company issued a convertible promissory note in an aggregate principal amount of $50.0 million (the "Convertible Promissory Note").

The Company analyzes its convertible debt instruments for embedded attributes that may require bifurcation from the host and accounted for as derivatives. At the inception of each instrument, in the event of a modification of a debt agreement, and at each reporting date, the Company performs an analysis of the embedded features requiring bifurcation and may elect, if eligible, to account for the entire debt instrument at fair value. If the fair value option were to be elected, any changes in fair value would be recognized in the accompanying statements of operations until the instrument is settled. Under the terms of the Note Purchase Agreement, the Convertible Promissory Note may be converted at the option of the noteholder into shares of Common Stock or an equivalent equity instrument resulting from a public company event. As a result of the Business Combination, the conversion options were bifurcated and accounted for as derivatives. The derivative instrument was recorded at fair value upon recognition and was subject to remeasurement to fair value at each balance sheet date, with any changes in estimated fair value recognized in the accompanying consolidated statements of operations and comprehensive income (loss).

On September 24, 2023, the Company and L1 Energy entered into an Amendment to Note Purchase Agreement and Convertible Promissory Note (the "Convertible Note Amendment") which amended the conversion terms and, as a result of such amendment, the conversion options no longer met the requirements to be bifurcated in accordance with *ASC Topic 815, "Derivatives and Hedging"*. The carrying value of the convertible note derivative liability was remeasured to fair value immediately prior to the execution of the Convertible Note Amendment and the change in fair value was recorded to the Company's consolidated statements of operations and comprehensive loss. The carrying value of the convertible note derivative liability was reclassified to equity and was recorded into additional paid-in capital on the Company's consolidated balance sheet.

Please refer to Note 6 "Fair Value of Financial Instruments" for further details regarding the fair value of the derivative instrument. In addition, please refer Note 9 "Long-Term Debt" for additional details regarding the Convertible Promissory Note and derivative instrument.

Convertible Preferred Stock Warrants

Warrants to purchase a total of 1,064,446 shares of Series C convertible preferred stock of Legacy Tigo were initially recognized as a liability and recorded at fair value upon issuance and were subject to remeasurement to fair value at each balance sheet date. As part of the Business Combination, Legacy Tigo convertible preferred stock was remeasured immediately before the Merger date, and was subsequently converted into Legacy Tigo common stock pursuant to the conversion rate in effect immediately prior to the consummation of the Business Combination and all related Legacy Tigo convertible preferred stock warrants were converted into warrants exercisable for shares of Common Stock with terms consistent with the Legacy Tigo convertible preferred stock warrants except for the number of shares exercisable and the exercise price, each of which was adjusted using the Exchange Ratio. In connection with the Business Combination, as discussed in Note 3, all outstanding Series C convertible preferred stock warrants were exercised resulting in the net issuance of 828,733 shares of convertible preferred stock which were immediately converted into Common Stock in connection with the recapitalization. As of December 31, 2023, there were no convertible preferred stock warrants outstanding.

Business Combinations

Other than the Merger, which was accounted for as a reverse recapitalization (see Note 3 for additional information), the Company accounts for business combinations under *ASC Topic 805, "Business Combinations"* using the acquisition method of accounting, and accordingly, the assets and liabilities of the acquired business are recorded at their fair values at the date of acquisition. The fair values assigned, defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between willing market participants, are based on estimates and assumptions determined by management. These valuations require the Company to make significant estimates and assumptions, especially with respect to intangible assets. Significant estimates in valuing certain intangible assets include, but are not limited to, future expected cash flows from acquired customer relationships and developed technology, royalty rates, and discount rates. The Company records the excess consideration over the aggregate fair value of tangible and intangible assets, net of liabilities assumed, as goodwill. All acquisition costs are expensed as incurred. Upon acquisition, the accounts and results of operations are included as of and subsequent to the acquisition date.

If the initial accounting for a business combination is incomplete by the end of a reporting period that falls within the measurement period, the Company reports provisional amounts in the consolidated financial statements. During the measurement period, the provisional amounts recognized at the acquisition date will be adjusted to reflect new information obtained about facts and circumstances that existed as of the acquisition date that, if known, would have affected the measurement of the amounts recognized as of that date and the Company records those adjustments in the consolidated financial statements.

Revenue Recognition

The Company complies with *ASC Topic 606*, *"Revenue from Contracts with Customers"* ("ASC Topic 606") for revenue recognition. In accounting for contracts with customers:

The Company determines revenue recognition through the following steps:

- Identification of the contract, or contracts, with a customer
- Identification of the performance obligations in the contract
- Determination of the transaction price
- Allocation of the transaction price to the performance obligations in the contract
- Recognition of revenue when, or as, the Company satisfies a performance obligation

Revenues are recognized when control of the promised goods or services are transferred to the Company's customers in an amount that reflects the consideration that is expected to be received in exchange for those goods or services. The Company generates all of its revenues from contracts with its customers. A description of principal activities from which the Company generates revenues follows.

- *Products Delivered at a Point in Time.* The Company's primary source of revenue is the sale of its hardware products. The Company's hardware products are fully functional at the time of shipment and do not require modification or customization for customers to use the products. The Company sells its products primarily to distributors that resell the Company's products to end users. Distributors do not have general rights of return and generally order goods for immediate resale to end customers. The Company uses present right to payment and transfer of title as indicators to determine the transfer of control to the customer. The Company recognizes revenue at a point in time when its performance obligation has been satisfied and control of the product is transferred to the customer, which generally aligns with shipping terms. Contract shipping terms include ExWorks ("EXW"), FOB Shipping Point and FOB Destination incoterms. Under EXW (meaning the seller fulfills its obligation to deliver when it makes goods available at its premises, or another specified location, for the buyer to collect), the performance obligation is satisfied and control is transferred at the point when the customer is notified that their order is available for pickup. Under FOB Shipping Point, control is transferred to the customer at the time the good is transferred to the shipper and under FOB Destination, at the time the customer receives the goods. We deduct sales returns to arrive at net revenue. Sales tax and other similar taxes are excluded from revenues. The Company has made the election to account for shipping and handling as activities to fulfill the promise to transfer the product and as such records amounts charged to customers for shipping and handling as revenue and the related costs are included in cost of revenues.

- *Services Delivered Over Time.* Sales of the Company's hardware products can include the Company's free or premium web-based monitoring service. These monitoring services represent a single performance obligation and is deferred at the sale date. The free monitoring service revenue is recognized ratably over an estimated service period of 5 years as the service is performed. The premium monitoring service is recognized ratably over the contracted service period, up to 20 years, as the service is performed. The full consideration of monitoring service revenue represented less than 1% of the total net revenue during the years ended December 31, 2023 and 2022. The allocation of revenue between the hardware and monitoring service deliverables is based on the Company's best estimate of the standalone selling price determined by considering multiple factors, including internal costs, gross margin and historical selling practices. Additionally, the Company provides software as a service ("SaaS") platform for our Predict+ technology. The Predict+ service revenue is recognized ratably over a contract service period up to 11 years, as the service is performed.

The Company typically incurs incremental costs to acquire customer contracts related to the Company's hardware sales in the form of sales commissions; however, because the expected benefit from these contracts is one year or less, the Company follows the ASC Topic 606 practical expedient and expenses these amounts as incurred.

The Company records certain contra revenue promotions as variable consideration and recognizes these promotions at the time the related revenue is recorded.

Deferred revenue or contract liabilities consists of payments received from customers in advance of revenue recognition for the Company's products and service. The current portion of deferred revenue represents the unearned revenue that will be earned within 12 months of the balance sheet date. Correspondingly, noncurrent deferred revenue represents the unearned revenue that will be earned after 12 months from the balance sheet date.

See Note 7 for additional information.

Cost of Revenue

The Company includes the following in cost of revenue: product costs, warranty costs, manufacturing personnel and logistics costs, inventory reserve charges, shipping and handling costs, hosting service costs related to the monitoring service, depreciation and amortization of manufacturing test equipment, and employee-related expenses which primarily consists of employees' salaries and health insurance expense.

Stock-Based Compensation

The Company measures the cost of employee and non-employee services received in exchange for stock-based awards based on the grant-date fair value of the award. The Company uses the Black-Scholes option pricing model to value its stock option awards. The fair value of restricted stock units ("RSU") granted is determined based on the price of the Company's common stock on the date of grant. The Company recognizes compensation expense of its awards over the requisite service period, which is typically the vesting period, for the entire award using the straight-line attribution method. The Company accounts for forfeitures as they occur.

Estimating the fair value of options requires the input of subjective assumptions, including the estimated fair value of the Company's common stock, the expected life of the options, stock price volatility, the risk-free interest rate and expected dividends. The assumptions used in the Company's Black-Scholes option-pricing model represent management's best estimates and involve a number of variables, uncertainties and assumptions and the application of management's judgment, as they are inherently subjective.

Research and Development

Research and development expenses are comprised of costs to design, develop, test or significantly improve our solar energy hardware and software solutions and primarily include personnel costs and facility-related expenses.

Advertising Costs

All advertising costs are expensed as incurred and included in sales and marketing expenses. Advertising expenses incurred by the Company were $0.8 million and $0.4 million for the years ended December 31, 2023 and 2022, respectively.

Income Taxes

Income taxes are accounted for under the asset-and-liability method as required by *ASC Topic 740,* "*Income Taxes"* ("ASC Topic 740"). Deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases and operating loss and tax credit carryforwards. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period corresponding to the enactment date. Under ASC Topic 740, a valuation allowance is required when it is more likely than not that all or some portion of the deferred tax assets will not be realized through generating sufficient future taxable income.

ASC Topic 740 defines the criterion an individual tax position must meet for any part of the benefit of the tax position to be recognized in financial statements prepared in conformity with GAAP. The Company may recognize the tax benefit from an uncertain tax position only if it is more likely than not such tax position will be sustained on examination by the taxing authorities, based solely on the technical merits of the respective tax position. The tax benefits recognized in the consolidated financial statements from such a tax position should be measured based on the largest benefit having a greater than 50% likelihood of being realized upon ultimate settlement with the tax authority. In accordance with the disclosure requirements of ASC Topic 740, the Company's policy on income statement classification of interest and penalties related to income tax obligations is to include such items as part of income tax expense.

The Tax Cuts and Jobs Act ("TCJA") subjects a U.S. shareholder to tax on global intangible low-taxed income ("GILTI") earned by certain foreign subsidiaries. Under GAAP, the Company can make an accounting policy election to either treat taxes due on the GILTI inclusion as a current period expense or factor such amounts into the Company's measurement of deferred taxes. The Company elected to treat the GILTI inclusion as a period expense.

Comprehensive Loss

Comprehensive loss consists of two components, net loss and other comprehensive loss. Other comprehensive loss refers to gains and losses that are recorded as an element of stockholder's equity but are excluded from net loss. The Company's other comprehensive loss consists of the change in net unrealized loss on marketable securities.

Recently Adopted Accounting Pronouncements

Recently issued accounting pronouncements not yet adopted

In November 2023, the FASB issued *ASU No. 2023-07*, *Improvements to Reportable Segment Disclosures (Topic 280)*. This ASU updates reportable segment disclosure requirements by requiring disclosures of significant reportable segment expenses that are regularly provided to the Chief Operating Decision Maker (CODM) and included within each reported measure of a segment's profit or loss. This ASU also requires disclosure of the title and position of the individual identified as the CODM and an explanation of how the CODM uses the reported measures of a segment's profit or loss in assessing segment performance and deciding how to allocate resources. The ASU is effective for annual periods beginning after December 15, 2023, and interim periods within fiscal years beginning after December 15, 2024. Adoption of the ASU should be applied retrospectively to all prior periods presented in the financial statements. Early adoption is also permitted. We are currently evaluating the provisions of this ASU and expect to adopt them for the year ending December 31, 2024.

In December 2023, the FASB issued *ASU No. 2023-09, Improvements to Income Tax Disclosures (Topic 740)*. This ASU requires disaggregated information about a reporting entity's effective tax rate reconciliation as well as additional information on income taxes paid. The ASU is effective on a prospective basis for annual periods beginning after December 15, 2024, although retrospective application is permitted. Early adoption is also permitted for annual financial statements that have not yet been issued or made available for issuance. The Company is currently evaluating the impact of adoption of this ASU will have and does not expect the standard will have a material impact on the Company's financial statements and related disclosures.

Recently adopted accounting pronouncements

In February 2016, the FASB issued *ASU No. 2016-02, Leases*, which requires a lessee to record a right-of-use asset and a corresponding lease liability on the balance sheet for all leases with terms longer than 12 months. A modified retrospective transition approach is required for lessees for capital and operating leases existing at, or entered into after, the beginning of the earliest comparative period presented in the financial statements, with certain practical expedients available. The standard is effective for the Company for reporting periods beginning after December 15, 2021, and interim periods within fiscal years beginning after December 15, 2022. The Company adopted annual reporting the guidance using the modified retrospective approach to apply the standard as of January 1, 2022, with no retrospective adjustments to prior periods on the Company's annual consolidated financial statements and related notes thereto for the year ended December 31, 2022. As permitted under the new guidance, the Company elected the package of practical expedients, which allowed the Company to retain prior conclusions regarding lease identification, classification and initial direct costs. For the Company's lease agreements with lease and non-lease components, the Company elected the practical expedient to account for these as a single lease component for all underlying classes of assets. Additionally, for short-term leases with an initial lease term of 12 months or less and with purchase options the Company is not reasonably certain will be exercised, the Company elected to not record ROU assets or corresponding lease liabilities on the Company's consolidated balance sheet. See Note 13, "Leases" for additional information on the Company's leases following the adoption of this standard.

In June 2016, the FASB issued *ASU No. 2016-13, Financial Instruments - Credit Losses*, which requires financial assets measured at amortized cost basis to be presented at the net amount expected to be collected. This standard is effective for fiscal years beginning after December 15, 2022. The Company adopted the guidance using the modified retrospective approach as of January 1, 2023. The cumulative effect of adopting ASC 326 did not have a financial impact to the Company's retained earnings as of January 1, 2023.

In August 2020, the FASB issued ASU Update No. 2020-06, *Debt — Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging — Contracts in Entity's Own Equity (Subtopic 815-40): Accounting for Convertible Instruments and Contracts in an Entity's Own Equity ("ASU 2020-06")*. The goal of the ASU 2020-06 is to simplify the complexity associated with applying GAAP for certain financial instruments with characteristics of liabilities and equity. More specifically, the amendments focus on the guidance for convertible instruments and derivative scope exception for contracts in an entity's own equity. The new standard is effective for public business entities, excluding entities eligible to be smaller reporting companies as defined by the SEC, for fiscal years beginning after December 15, 2021. For all other entities, the standard is 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. Entities may adopt the guidance through either a modified retrospective method or full retrospective method. The Company adopted *ASU 2020-06* on January 1, 2023, and determined the impact upon adoption to the consolidated financial statements is immaterial.

In December 2019, the FASB issued *ASU No. 2019-12, "Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes.*" This ASU removes specific exceptions to the general principles in *ASC Topic 740, "Accounting for Income Taxes"* ("Topic 740") and simplifies certain GAAP requirements. *ASU 2019-12* is effective for non-public business entities' interim periods within those fiscal years, beginning after December 15, 2022. Depending on the amendment, adoption may be applied on a retrospective, modified retrospective or prospective basis. The Company adopted ASU 2019-12 on January 1, 2022, and determined the impact upon adoption to the consolidated financial statements is immaterial.

3. Merger with Roth CH Acquisition IV Co.

The Business Combination was accounted for as a reverse recapitalization in accordance with GAAP. Under this method of accounting, ROCG was treated as the "acquired" company and Legacy Tigo was considered the "acquirer" for financial reporting purposes. This determination was primarily based on Legacy Tigo stockholders comprising a majority of the voting power of the Company, Legacy Tigo's senior management comprising substantially all of the senior management of the Company, Legacy Tigo's relative size compared to ROCG, and Legacy Tigo's operations prior to the acquisition comprising the only ongoing operations of the Company. Accordingly, for accounting purposes, the financial statements of the Company represent a continuation of the financial statements of Legacy Tigo with the Business Combination being treated as the equivalent of Legacy Tigo issuing stock for the net assets of ROCG, accompanied by a recapitalization. The net assets of ROCG are stated at historical costs, with no goodwill or other intangible assets recorded. Operations prior to the Business Combination are presented as those of Legacy Tigo. All periods prior to the Business Combination have been retrospectively adjusted using the exchange ratio established in the Business Combination of 0.233335 (the "Exchange Ratio") to affect the reverse recapitalization.

As part of the reverse recapitalization, Legacy Tigo acquired $2.2 million of cash, $0.6 million of prepaid expenses and insurance and assumed $3,400 of accrued expenses and $61,000 of income tax payable. The Company incurred $6.1 million in transaction costs relating to the Business Combination, which were charged directly to additional paid in capital to the extent of cash received. Transaction costs in excess of cash acquired of $3.9 million were charged to general and administrative expenses.

Immediately prior to the closing of the Business Combination:

- all shares of Legacy Tigo's outstanding Series E, Series D, Series C-1, Series C, Series B-4, Series B-3, Series B-2, Series B-1, Series A-4, Series A-3, Series A-2, and Series A-1 convertible preferred stock were converted into an equivalent number of shares of Legacy Tigo common stock on a one-to-one basis and additional shares of Legacy Tigo common stock were issued to settle the accumulated dividend to the Series E and Series D convertible preferred stockholders of $12.6 million;
- all common warrants net of exercise were converted into an equivalent number of shares of Legacy Tigo common stock on a one-to-one basis; and
- all preferred warrants net of exercise were converted into an equivalent number of shares of Legacy Tigo preferred stock on a one-to-one basis, and subsequently converted into an equivalent number of shares of Legacy Tigo common stock on a one-to-one basis.

At the effective time of the Business Combination, each share of Legacy Tigo common stock issued and outstanding immediately prior to the closing (including the shares of Legacy Tigo common stock issued in connection with the foregoing) were canceled and converted into the right to receive a pro rata portion of the merger consideration based on the Exchange Ratio.

Immediately following the Business Combination, there were 58,144,543 shares of Common Stock issued and outstanding, options to purchase an aggregate of 4,358,301 shares of Common Stock and 5,768,750 warrants outstanding to purchase shares of Common Stock.

4. Acquisition of Foresight Energy, Ltd.

On January 25, 2023 ("Acquisition Closing Date"), Legacy Tigo acquired 100% of the equity interests of fSight. The results of fSight's operations have been included in the consolidated financial statements since the Acquisition Closing Date. fSight primarily focuses on developing and marketing a software as a service platform, based on artificial intelligence for the smart management of electrical energy. The acquisition expands the Company's ability to leverage energy consumption and production data for solar energy producers, adding a prediction platform that provides actionable system performance data, from the grid down to the module level.

Under the terms of the purchase agreement, total consideration amounted to $13.2 million which consisted of 5,598,751 shares of Legacy Tigo's common stock (which represents 1,306,385 shares of Common Stock on an as-converted basis as a result of the Business Combination) issued at closing with a fair value of approximately $11.0 million, 737,233 shares of Legacy Tigo's common stock (which represents 172,022 shares of Common Stock on an as-converted basis as a result of the Business Combination) with a fair value of approximately $1.4 million to be issued 12 months from closing and 368,617 shares of Legacy Tigo's common stock (which represents 86,011 shares of Common Stock on an as-converted basis as a result of the Business Combination) with a fair value of approximately $0.7 million to be issued 18 months from closing (collectively with the shares to be issued at 12 months "Contingent Shares"). In addition to the consideration in the purchase agreement, there is an additional $0.5 million in consideration related to a loan that the Company issued to fSight prior to the Acquisition Closing Date, for a total consideration transferred of $13.7 million. The loan payable was deemed settled immediately following the Acquisition Closing Date.

Pursuant to the terms of the purchase agreement, the Contingent Shares are subject to adjustment based on certain indemnification obligations, liabilities or settlements that may arise during the contingency period, which ends 18 months following the Acquisition Closing Date. During the year ended December 31, 2023, there was an adjustment recorded against the Contingent Shares related to an unrecorded liability that was not present as of the opening balance sheet date of January 25, 2023, and the number of Contingent Shares was adjusted downward by 5,745 shares to reflect this change. As of December 31, 2023, there was a total of up to 252,288 Contingent Shares that may be issued pursuant to the terms of the purchase agreement.

The contingent shares were recorded as a liability at a fair value of approximately $2.1 million on the Acquisition Closing Date based on the fair value of Legacy Tigo's common stock at the Acquisition Closing Date. The contingent shares liability is recorded in accrued expenses and other current liabilities financial statement line items within the consolidated balance sheet. At December 31, 2023, the liability was revalued to $0.5 million based upon Legacy Tigo's common stock fair value per share on December 31, 2023. The $1.6 million gain on mark to market was recorded in the change in fair value of preferred stock warrant and contingent share liability financial statement line item within the consolidated statement of operations and comprehensive loss for the year ended December 31, 2023.

The transaction was accounted for as a business combination pursuant to *ASC Topic 805, "Business Combinations"*, using the acquisition method of accounting and in conjunction with the acquisition, Legacy Tigo recognized $0.2 million of acquisition-related costs during the year ended December 31, 2023, which were expensed as incurred and are recorded in general and administrative expenses on the consolidated statement of operations and comprehensive loss.

The following table summarizes the provisional fair values of the identifiable assets acquired and liabilities assumed at the date of the acquisition:

(in thousands)	As previously reported - September 30, 2023	PPA Adjustments	Final - December 31, 2023
Consideration transferred [1]:			
Fair value of common stock issued	$ 10,974	$ —	$ 10,974
Fair value of contingent shares	2,167	—	2,167
Deemed settlement of loan payable	527	—	527
Total consideration	$ 13,668	$ —	$ 13,668
Assets Acquired			
Cash and cash equivalents	$ 55	$ —	$ 55
Accounts receivable	117	—	117
Property and equipment	9	—	9
Developed technology	1,820	—	1,820
Customer relationships	170	—	170
Goodwill	13,079	(870)	12,209
Total assets acquired	$ 15,250	$ (870)	$ 14,380
Liabilities Assumed			
Accounts payable	$ 418	$ —	$ 418
Accrued expenses	294	—	294
Other current liabilities	89	(89)	—
Other long-term liabilities	781	(781)	—
Net assets acquired	$ 13,668	$ (870)	$ 13,668

(1) The reported provisional amounts presented above have been updated from the Company's S-1 filed with the SEC on June 22, 2023. The Company recorded an out of period adjustment related to the adjustment of the provisional fair market value of the Legacy Tigo common stock that was used to develop the calculation of the purchase price consideration. The Company does not believe that the adjustment had a material impact on its consolidated statements of operations and comprehensive loss, consolidated balance sheets, or consolidated statements of cash flows in any periods previously reported.

During the fourth quarter of 2023, upon the recognition that the liabilities associated with other current liabilities and other long-term liabilities, initially assumed and incorporated within the opening balance sheet as of January 25, 2023, were not obligatory, the Company made an adjustment to the financial statement line items associated with these liabilities and correspondingly adjusted goodwill. Additionally, in the fourth quarter of 2023, the Company finalized its fair value determination on the acquired assets and assumed liabilities, and completed its assessment of the purchase price allocation. The purchase price was allocated to the tangible assets and identifiable intangible assets acquired and liabilities assumed based on their acquisition date estimated fair values. Accounts receivable and property and equipment acquired were not material in size or scope, and the carrying amounts of these assets represented their fair value. The identifiable intangible assets consist of developed technology and customer relationships which were assigned fair values of approximately $1.8 million and $0.2 million, respectively. The developed technology and customer relationships are all being amortized on a straight-line basis over 10 years.

Goodwill represents the excess of the purchase price over the identifiable tangible and intangible assets acquired in addition to liabilities assumed arising from the business combination. The Company believes the goodwill related to the acquisition was attributable to the expected synergies, value of the assembled workforce, and the collective experience of the management team with regards to its operations, customers, and industry. As a non-taxable stock acquisition, the value attributable to the acquired intangibles and goodwill are not tax deductible.

Supplemental Pro Forma Information (Unaudited)

The following table presents supplemental pro-forma information for the years ended December 31 2023 and 2022, as if the merger with fSight had occurred on January 1, 2022. These amounts have been calculated after applying the Company's accounting policies and are based upon currently available information.

(in thousands)	Year Ended December 31, 2023	Year Ended December 31, 2022
Net revenue	$ 145,301	$ 81,629
Net loss	$ (1,130)	$ (8,313)

Supplemental Information of Operating Results

For the year ended December 31, 2023, the Company's consolidated statement of operations included net revenues of $0.6 million and a net loss of $1.4 million attributable to fSight.

5. Net Loss Per Share

Basic net loss per share of common stock is computed by dividing net loss attributable to common stockholders by the weighted-average number of shares of common stock outstanding during each period, without consideration for potential dilutive shares of common stock. Diluted net loss per share of common stock is computed by dividing the net loss attributable to common stockholders by the weighted-average number of common share equivalents outstanding for the period determined using the treasury-stock method and if-converted method, as applicable. Basic and diluted net loss per share attributable to common stockholders is presented in conformity with the two-class method required for participating securities, which include convertible preferred stock.

Under the two-class method, net loss is adjusted by the difference between the fair value of consideration transferred and the carrying amount of convertible preferred stock during periods where the Company redeems its convertible preferred stock. The remaining earnings (undistributed earnings) are allocated to common stock and each series of convertible preferred stock to the extent that each preferred security may share in earnings as if all of the earnings for the period had been distributed. The total earnings allocated to common stock is then divided by the number of outstanding shares to which the earnings are allocated to determine the earnings per share. The two-class method is not applicable during periods with a net loss, as the holders of the convertible preferred stock have no obligation to fund losses.

For the year ended December 31, 2023, the Company reported a net loss. In accordance with *ASC Topic 260, "Earning Per Share"*, the difference between our basic and diluted loss per share calculations is due to the application of the if-converted method for the Company's convertible debt. In the diluted loss per share calculation, the numerator is adjusted by adding back interest expense and changes in fair value of derivative liability, reflecting the assumed conversion of the convertible debt into Common Stock. The denominator includes the dilutive effect of the shares that the Company would issue under the convertible notes if-converted.

For the year ended December 31, 2022, the Company reported a net loss. The diluted net loss per share calculation is the same as basic net loss per share since dilutive shares are not assumed to have been issued if their effect is antidilutive. Therefore, the weighted-average shares used to calculate both basic and diluted net loss per share are the same.

The following table sets forth the computation of basic and diluted net loss per share to common stockholders:

(in thousands, except share and per share data)	Year Ended December 31, 2023	2022
Basic net loss per common share calculation:		
Net loss attributable to common stockholders	$ (4,383)	$ (13,381)
Undistributed loss to preferred stock stockholders	1,418	—
Net loss attributable to common stockholders – basic	$ (2,965)	$ (13,381)
Weighted-average shares of common stock outstanding – basic	38,048,516	4,940,562
Net loss per share of common stock – basic	$ (0.08)	$ (2.71)
Diluted net loss per common share calculation:		
Net loss attributable to common stockholders	$ (4,383)	$ (13,381)
Reverse: interest expense and change in fair value on derivative liability	(4,322)	—
Net loss attributable to common stockholders	(8,705)	(13,381)
Undistributed loss to preferred stock stockholders	2,817	—
Net loss attributable to common stockholders – diluted	$ (5,888)	$ (13,381)
Weighted-average shares of common stock outstanding – basic	38,048,516	4,940,562
Convertible promissory note	5,174,618	—
Weighted-average shares of common stock – diluted	43,223,134	4,940,562
Net loss per share of common stock – diluted	$ (0.14)	$ (2.71)

The following potentially dilutive securities have been excluded from the computation of diluted weighted-average shares of common stock outstanding, as they would be anti-dilutive:

	As of December 31, 2023	2022
Outstanding stock options and restricted stock units	3,470,172	4,263,243
Convertible preferred stock warrants	580,729	248,372
Common stock warrants	75,305	1,915,372
Convertible preferred stock	—	46,467,565
	4,126,206	52,894,552

6. Fair Value of Financial Instruments

Fair Value Measurements

The following fair value hierarchy table presents information about the Company's assets and liabilities measured at fair value on a recurring basis:

(in thousands)	Fair value measurement at reporting date using (Level 1)	(Level 2)	(Level 3)[(1)]
December 31, 2023			
Assets:			
Cash equivalents:			
Money market accounts	$ 1,646	$ —	$ —
Marketable securities:			
Corporate bonds	$ —	$ 19,489	$ —
U.S. agency securities	$ —	$ 9,294	$ —
Liabilities:			
Contingent shares liability from fSight acquisition	$ 527	$ —	$ —
December 31, 2022			
Liabilities:			
Preferred stock warrant liability	$ —	$ —	$ 1,507

(1) The Company utilized the Black-Scholes options pricing model to fair value the preferred stock warrant liability.

The following is a summary of the changes in fair value of the Company's marketable securities as of December 31, 2023:

(in thousands)	Amortized cost	Unrealized gain	Unrealized loss	Fair value
Available-for-sale marketable securities:				
Current assets				
Corporate bonds	$ 17,561	$ 2	$ (52)	$ 17,511
U.S. agency securities	9,300	2	$ (7)	9,295
Total	26,861	4	(59)	26,806
Long-term assets				
Corporate bonds	1,981	3	(7)	1,977
Total	1,981	3	(7)	1,977
Total available-for-sale marketable securities	$ 28,842	$ 7	$ (66)	$ 28,783

As of December 31, 2023, available-for-sale securities consisted of investments that mature within approximately one to two years.

The fair value of the preferred stock warrants was calculated using the Black-Scholes option pricing model and is revalued to fair value at the end of each reporting period until the earlier of the exercise or expiration of the preferred stock warrants. As a part of the Business Combination, Legacy Tigo preferred stock warrants were converted into the Legacy Tigo common stock at the conversion rate in effect immediately prior to the consummation of the Business Combination. Please see Note 3, "Merger with Roth CH Acquisition IV Co." for additional information. The fair value of the warrant liabilities was estimated using the Black-Scholes option pricing model using the following assumptions:

	May 23, 2023 (Merger Date)	As of December 31, 2022
Expected volatility	68% - 70%	70% - 76%
Risk-free interest rate	4.10% - 4.28%	4.22% - 4.34%
Expected term (in years)	2.0 - 2.6	2.4 - 3.0
Expected dividend yield	—	—
Fair value of Series C convertible preferred stock	$ 1.89	$ 1.82

The table presented below is a summary of the changes in fair value of the Company's preferred stock warrant liability which was exercised immediately prior to the Business Combination into Legacy Tigo preferred stock and subsequently converted into Legacy Tigo common stock. Upon the consummation of the Business Combination, such shares of Legacy Tigo common stock were converted to shares of Common Stock. Please see Note 3, "Merger with ROTH CH Acquisition IV Co." for additional information.

(in thousands)	Fair value of preferred stock warrant liability
Balance at January 1, 2022	$ 487
Change in fair value	1,020
Balance at December 31, 2022	1,507
Change in fair value	501
Exercise of warrants	(2,008)
Balance at December 31, 2023	$ —

The table presented below is a summary of the changes in fair value of the Company's Level 3 financial instruments. The contingent shares from the fSight Acquisition (Note 4) were initially classified as a Level 3 measurement and upon the Merger were transferred out of Level 3 into Level 1, as they are now valued on the observable stock price of the Company. In addition, the Company bifurcated the conversion options associated with the convertible promissory notes and separately account for them as a derivative liability. On September 24, 2023, the Company and L1 Energy entered into the Convertible Note Amendment. As a result of the Convertible Note

Amendment, the conversion options no longer meet the requirements to be bifurcated into a convertible note derivative liability in accordance with *ASC 815, Derivatives and Hedging*. The carrying value of the convertible note derivative liability was remeasured to fair value immediately prior to the execution of the Convertible Note Amendment and was reclassified to equity. The reclassification was recorded in additional paid-in capital on the Company's consolidated balance sheet. Please refer to Note 9 "Long-Term Debt" for additional details regarding the derivative instrument.

(in thousands)	Fair value of contingent shares from fSight acquisition	Fair value of derivative liability
Balance at December 31, 2022	$ —	$ —
Fair value at inception	2,167	23,525
Change in fair value	29	(12,247)
Transfer out of level 3	(2,196)	(11,278)
Balance at December 31, 2023	$ —	$ —

The fair value of the convertible note derivative liability was estimated using the Black-Scholes option pricing model using the following assumptions:

	As of September 24, 2023 [(1)]
Expected volatility	58.6 %
Risk-free interest rate	4.9 %
Expected term (in years)	2.3
Expected dividend yield	—

(1) The fair value of the convertible note derivative liability was remeasured on September 24, 2023, immediately prior to the execution of the Convertible Note Amendment.

During the year ended December 31, 2022, there were no transfers between Level 1, Level 2 and Level 3.

Fair Value of Financial Instruments

The carrying amounts of cash and cash equivalents, restricted cash, marketable securities, accounts receivable, accounts payable, and customer deposits approximate fair value due to their short-term nature. As of December 31, 2023, the fair value and carrying value of the Company's Convertible Promissory Note (Note 9) was $58.1 million and $31.6 million, respectively. As of December 31, 2022, the fair value and carrying value of the Company's Series 2022-1 Notes was $21.0 million and $20.6 million, respectively. The estimated fair value for the Company's Convertible Promissory Note and Series 2022-1 Notes was based on discounted expected future cash flows using prevailing interest rates which are Level 3 inputs under the fair value hierarchy.

7. Net Revenue

Geographic Revenues

The Company sells its products in the Americas (North and South America), EMEA (Europe, Middle East, and Africa), and APAC (Asia-Pacific) regions.

The following table summarizes net revenue by major geographic region (in millions):

	Year Ended December 31,	
(in thousands)	2023	2022
EMEA	$ 109,301	$ 52,016
Americas	25,171	22,456
APAC	10,761	6,851
Total net revenue	$ 145,233	$ 81,323

Deferred Revenue

Deferred revenue or contract liabilities consists of payments received from customers in advance of revenue recognition for the Company's products and service. The current portion of deferred revenue represents the unearned revenue that will be earned within 12 months of the balance sheet date. Correspondingly, noncurrent deferred revenue represents the unearned revenue that will be earned after 12 months from the balance sheet date.

The following table summarizes the changes in deferred revenue:

	Year Ended December 31,	
(in thousands)	**2023**	**2022**
Balance at the beginning of the period	$ 1,122	$ 232
Deferral of revenue	30,370	20,327
Recognition of unearned revenue	(30,691)	(19,437)
Balance at the end of the period	$ 801	$ 1,122

As of December 31, 2023, the Company expects to recognize $0.8 million from remaining performance obligations over a weighted average term of 3.4 years.

8. Supplementary Balance Sheet Information

Selected financial data as of the dates presented below is as follows (in thousands, except useful life data):

Inventory, net	**December 31, 2023**	**December 31, 2022**
Raw materials	$ 668	$ 1,739
Work in process	—	31
Finished goods	60,733	23,145
Inventory, net	$ 61,401	$ 24,915

The inventory reserves were $1.0 million and $0.3 million as of December 31, 2023 and 2022, respectively.

Property and equipment, net	**Estimated Useful Life**	**December 31, 2023**	**December 31, 2022**
Machinery and equipment	7 years	$ 5,810	$ 3,881
Vehicles	5 years	31	31
Computer software	5 years	192	185
Computer equipment	5 years	574	526
Furniture and fixtures	5 years	216	179
Leasehold improvements	3 - 6 years	457	42
Construction in progress		—	—
		7,280	4,844
Less: Accumulated depreciation		3,822	3,192
Property and equipment, net		$ 3,458	$ 1,652

For the years ended December 31, 2023 and 2022 the Company recorded depreciation expense of $0.9 million and $0.6 million, respectively, in the consolidated statements of operations.

Accrued expenses and other current liabilities	December 31, 2023	December 31, 2022
Accrued vacation	$ 856	$ 829
Accrued compensation	2,514	624
Accrued interest	1,222	9
Accrued professional fees	409	2,502
Accrued warehouse and freight	1,001	143
Accrued other	1,974	275
Other current liabilities[(1)]	705	—
Accrued expenses and other current liabilities	$ 8,681	$ 4,382

(1) Other current liabilities of $0.7 million for the period ended December 31, 2023, are primarily related to the current portion of the contingent shares liability related to the acquisition of fSight in Q1 2023. See "Note 4" for additional information.

9. Long-Term Debt

Long-term debt consisted of the following (in thousands):

	December 31, 2023	December 31, 2022
Convertible Promissory Note	$ 50,000	$ —
Series 2022-1 Notes	—	20,833
Total	50,000	20,833
Less: unamortized debt discount and issuance costs	(18,430)	(191)
Less: current portion	—	(10,000)
Long-term debt, net of unamortized debt discount, issuance costs and current portion	$ 31,570	$ 10,642

Convertible Promissory Notes

On January 9, 2023, the Company entered into a convertible promissory note purchase agreement ("Note Purchase Agreement") with L1 Energy Capital Management S.a.r.l in exchange for cash of $50.0 million ("Convertible Promissory Notes"). Outstanding borrowings under the Convertible Promissory Notes bear interest at a rate of 5.0% per year. The principal amount is due at the maturity date of January 9, 2026 and interest is payable semiannually beginning July 2023. As of December 31, 2023, there was $1.2 million of accrued interest in the consolidated balance sheet.

Under the terms of the Note Purchase Agreement, the Convertible Promissory Note may be converted at the option of the note holder into the Company's common stock or an equivalent equity instrument resulting from a public company event. The conversion price is based on a pre-money valuation divided by the aggregate number of the Company's outstanding shares at the issuance date and adjusted for any cash dividends paid on the Company's capital stock. The conversion price and number of conversion shares are subject to standard anti-dilution adjustments. Upon a change of control event the note holder may (i) convert the Convertible Promissory Note immediately prior to the event into the Company's common stock at a conversion price equal to the lesser of the Convertible Promissory Note's original conversion price or the price per share of the Company's common stock implied by the change of control event transaction agreement or (ii) require the redemption of the Convertible Promissory Note in cash, including the payment of a make-whole amount of all unpaid interest that would have otherwise been payable had the Convertible Promissory Note remained outstanding through the maturity date. The Company's obligations under the Note Purchase Agreement may be accelerated, subject to customary grace and cure periods, upon the occurrence of an event of default. The Note Purchase Agreement defines events of default as the occurrence of any one of the following; 1) a default in payment of any part of principal or unpaid accrued interest on the Convertible Promissory Note when due and payable; 2) the Company issues a written statement that it is unable to pay its debts as they become due, or the Company files a voluntary petition for bankruptcy or insolvency proceeding, the Company, or its directors or majority shareholders take action looking to the dissolution or liquidation of the Company; 3) the involuntary bankruptcy of the Company defined as the commencement of any proceeding against the Company seeking any bankruptcy reorganization; 4) the Company defaults on any of its performance obligations under the Note Purchase Agreement; 5) any material portion of the assets of the Company or any subsidiary of the Company is seized or a levy is filed against such assets; 6) a default that remains uncured on any other agreement evidencing the indebtedness of the Company or its subsidiaries for an amount of $10 million or more whose terms allow for the acceleration of the repayment of such indebtedness due to the consummation of the transactions contemplated in this Note Purchase Agreement.

As a result of the Business Combination, the conversion options were bifurcated and accounted for as derivatives. Upon recognition, the Company recorded the conversion options and associated debt discount at a fair value of $23.5 million. On September 24, 2023, the Company and L1 Energy entered into the Convertible Note Amendment which modified the conversion terms of the Convertible Promissory Notes. As a result, the conversion options no longer met the criteria to be bifurcated into a convertible note derivative liability; instead, the conversion options were reclassified to equity under *ASC Topic 815, "Derivatives and Hedging"*.

Immediately prior to the execution of the Convertible Note Amendment, the Company fair valued the convertible note derivative liability at $11.3 million. Please refer to Note 6, "Fair Value of Financial Instruments", for further detail on the inputs for the final fair value calculation. The resulting change in fair value was recorded in the Company's consolidated statement of operation and comprehensive loss. Subsequently, the convertible note derivative liability was reclassified to an equity classified derivative and was recorded into additional paid-in capital on the Company's consolidated balance sheet.

Future aggregate principal maturities of long-term debt are as follows as of December 31, 2023 (in thousands):

Remainder of 2023	$	—
2024		—
2025		—
2026		50,000
Thereafter		—
	$	50,000

Series 2022-1 Notes

In January 2023, concurrently with the Convertible Promissory Note transaction, the Company repaid the Series 2022-1 Notes in full with the proceeds from the Convertible Promissory Note and wrote off $0.2 million of unamortized debt issuance costs related to the previously outstanding Series 2022-1 Notes, which are included in loss on debt extinguishment on the consolidated statements of operations and comprehensive loss.

Senior Bonds

In January 2022, concurrently with the Series 2022-1 Notes transaction, the Company repaid the Senior Bonds in full with the proceeds from the Series 2022-1 Notes and wrote off $0.5 million of unamortized debt issuance costs related to the previously outstanding Senior Bonds and $3.1 million of expenses related to lender fees on the Series 2022-1 Notes, which are included in loss on debt extinguishment on the consolidated statements of operations and comprehensive loss.

Net debt issuance costs are presented as a direct reduction of the Company's long-term debt in the consolidated balance sheets and amount to $23.9 million and $0.2 million as of December 31, 2023 and December 31, 2022, respectively. During the years ended December 31, 2023 and 2022, the Company recorded amortization of $5.5 million and $0.3 million, respectively, to interest expense pertaining to debt discount and issuance costs.

10. Commitments and Contingencies

Employment Agreements

The Company entered into employment agreements with key personnel providing compensation and severance in certain circumstances, as defined in the respective employment agreements.

Legal

In the normal course of business, the Company may receive demands or become involved in legal disputes that are not covered by insurance. While the Company intends to vigorously defend itself with respect to such disputes, any potential outcomes resulting from such claims would be inherently difficult to quantify.

Indemnification Agreements

From time to time, in its normal course of business, the Company may indemnify other parties with which it enters into contractual relationships, including customers, lessors and parties to other transactions with the Company. The Company may agree to hold other parties harmless against specific losses, such as those that could arise from a breach of representation, covenant or third-party claims. It may not be possible to determine the maximum potential amount of liability under such indemnification agreements due to the unique facts and circumstances that are likely to be involved in each particular claim and indemnification provision. In addition, we believe the likelihood is remote that payments under any indemnification agreements described above will have a material effect on the Company's consolidated financial statements.

The Company has also indemnified its Directors and Executive Officers, to the extent legally permissible, against all liabilities reasonably incurred in connection with any action in which such individual may be involved by reason of such individual being or having been a Director or executive officer.

The Company believes the estimated fair value of any obligation from these indemnification agreements is minimal; therefore, these consolidated financial statements do not include a liability for any potential obligations at December 31, 2023.

11. Common Stock and Convertible Preferred Stock

Common Stock

The Company is authorized to issue 150,000,000 shares of Common Stock. Each share of Common Stock entitles the holder to one vote on all matters submitted to a vote of the Company’s stockholders.

In connection with the Business Combination, the Company issued 1,700,498 shares of Common Stock to former stockholders of ROCG and 118,021 shares of Common Stock to Roth Capital Partners, LLC.

Common Stock Reserved for Future Issuance

Shares of Common Stock reserved for future issuance were as follows:

	As of December 31, 2023
Stock options issued and outstanding	4,872,527
Restricted stock units issued and outstanding	872,037
Shares available for potential conversion of L1 Convertible Note	5,305,437
Shares available for fSight Contingent Shares	252,288
Shares available for grant under 2023 Equity Incentive Plan	4,769,377
	16,071,666

Common Stock Warrants

Legacy Tigo had outstanding warrants to purchase 1,915,372 shares of Legacy Tigo common stock ("Legacy Warrants"), which (prior to the consummation of the Business Combination) represented rights to purchase Legacy Tigo common stock. During the year ended December 31, 2023, 1,915,372 Legacy Warrants were net exercised resulting in the issuance of 1,491,229 shares of Common Stock. As of December 31, 2023, there were no Legacy Warrants outstanding.

In connection with the Business Combination, the Company assumed 5,750,000 warrants originally issued as part of ROCG's units in ROCG's initial public offering (the "Public Warrants") and 18,750 warrants issued to the initial stockholders of ROCG in a private placement in connection with ROCG's initial public offering (the "Private Warrants" and, together with the Public Warrants, the "Warrants"), which, in each case, entitle the holder to purchase one share of Common Stock at an exercise price of $11.50 per share. Except with respect to certain registration rights and transfer restrictions, the Private Warrants are identical to the Public Warrants. The Company analyzed the Warrants and determined they are freestanding instruments and do not exhibit any of the characteristics in ASC 480, Distinguishing Liabilities from Equity, and therefore are not classified as liabilities under ASC 480, Distinguishing Liabilities from Equity.

On August 9, 2023, the Company announced the redemption of all of its outstanding Public Warrants and Private Warrants to purchase shares of Common Stock that were issued under the Warrant Agreement, dated as of August 5, 2021, by and among the Company and Continental Stock Transfer & Trust Company, as warrant agent, at a redemption price of $0.01 per Warrant for those Warrants that remain outstanding following 5:00 p.m. New York City time on September 8, 2023.

Under the terms of the Warrant Agreement, the Company was entitled to redeem all of its outstanding Warrants for $0.01 per Warrant if the reported closing price of the Company's Common Stock was at least $18.00 per share on each of twenty trading days within a thirty trading day period ending on the third trading day prior to the date on which a notice of redemption is given. This performance threshold was achieved following the market close on August 4, 2023.

A total of 324,546 Warrants were exercised through September 8, 2023, resulting in proceeds, net of issuance costs, of $3.7 million. All other Warrants were redeemed on September 8, 2023.

The Company paid $0.1 million for the remaining Warrants that were not exercised as of September 8, 2023, which was recorded as a reduction to additional paid-in capital on the Company's consolidated balance sheet. During the year ended December 31, 2023, there were 324,546 exercises of Warrants.

Convertible Preferred Stock

In connection with the Business Combination, as discussed in Note 3, the Company issued 47,918,992 shares of Common Stock to holders of convertible preferred stock of Legacy Tigo. No convertible preferred securities were outstanding as of December 31, 2023. Prior to the Business Combination, Legacy Tigo's convertible preferred stock was classified outside of stockholders' deficit because the shares contained deemed liquidation rights that were contingent redemption features not solely within the control of Legacy Tigo. As a result, all of Legacy Tigo's convertible preferred stock was classified as mezzanine equity.

During the year ended December 31, 2022, Legacy Tigo sold an aggregate of 7,832,394 shares of its Series E convertible preferred stock ("Series E") in exchange for gross proceeds of $41.0 million. Legacy Tigo incurred $0.1 million in issuance costs for the Series E sale.

At December 31, 2022, convertible preferred stock consisted of the following. The Company has retroactively adjusted the shares issued and outstanding to reflect the exchange ratio of 0.233335 as described in Note 3.

(in thousands, except for share data)	Shares Authorized	Shares Issued and Outstanding	Carrying Value	Aggregate Liquidation Preference
Series E	8,601,120	7,832,394	$ 40,770	$ 44,108
Series D	11,513,253	11,513,253	22,192	28,943
Series C-1	9,020,682	9,020,682	2,180	18,000
Series C	6,318,524	6,070,151	11,647	13,442
Series B-4	7,172,501	7,172,501	7,582	11,199
Series B-3	1,546,441	1,546,441	862	2,620
Series B-2	174,208	174,208	105	340
Series B-1	1,863,215	1,863,215	611	2,918
Series A-4	570,976	570,976	661	4,182
Series A-3	466,245	466,245	260	1,604
Series A-2	149,281	149,281	160	1,021
Series A-1	88,216	88,216	110	679
	47,484,662	46,467,563	$ 87,140	$ 129,056

Convertible Preferred Stock Warrants

Warrants to purchase a total of 1,064,446 shares of Series C convertible preferred stock of Legacy Tigo were initially recognized as a liability and recorded at fair value upon issuance and were subject to remeasurement to fair value at each balance sheet date. As part of the Business Combination, Legacy Tigo convertible preferred stock was remeasured immediately before the Merger date, and was subsequently converted into Legacy Tigo common stock pursuant to the conversion rate in effect immediately prior to the consummation of the Business Combination and all related Legacy Tigo convertible preferred stock warrants were converted into warrants exercisable for shares of Common Stock with terms consistent with the Legacy Tigo convertible preferred stock warrants except for the number of shares exercisable and the exercise price, each of which was adjusted using the Exchange Ratio. In connection with the Business Combination, as discussed in Note 3, all outstanding Series C convertible preferred stock warrants were exercised resulting in the net issuance of 828,733 shares of convertible preferred stock which were immediately converted into Common Stock in connection with the recapitalization. As of December 31, 2023, there were no convertible preferred stock warrants outstanding.

12. Stock-Based Compensation

The Company adopted the 2008 Stock Plan ("2008 Plan") under which it may issue stock options to purchase shares of common stock, and award restricted stock and stock appreciation rights to employees, Directors and consultants. The 2008 Plan expired in March 2018 and all award issuance therefore ceased. Options generally vest over a four-year period with a one-year cliff. The option term is no longer than five years for incentive stock options for which the grantee owns greater than 10% of the Company's capital stock and no longer than 10 years for all other options. The Company has a repurchase option on unvested restricted stock exercisable upon the voluntary or involuntary termination of the purchaser's employment with the Company for any reason. The Company's repurchase right lapses in accordance with the vesting terms. Through December 31, 2023, there have been no exercises of common stock options prior to the vesting of such options. Options outstanding under the 2008 Plan will remain outstanding until they are exercised, canceled or expire.

In May 2018, the Company adopted the 2018 Stock Plan ("2018 Plan") under which the Company may issue stock options to purchase shares of common stock, and award restricted stock and stock appreciation rights to employees, Directors and consultants.

Under the 2018 Plan, the Board of Directors may grant incentive stock options or nonqualified stock options. Incentive stock options may only be granted to Company employees. The 2018 Plan expired in May 2023 and all award issuance therefore ceased. The exercise price of incentive stock options and non-qualified stock options cannot be less than 100% of the fair value per share of the Company's common stock on the grant date. If an individual owns more than 10% of the Company’s outstanding capital stock, the price of each share incentive stock option will be at least 110% of the fair value. Fair value is determined by the Board of Directors. Options generally vest over a four-year period with a one-year cliff. The option term is no longer than five years for incentive stock options for which the grantee owns greater than 10% of the Company’s capital stock and no longer than 10 years for all other options. The Company has a repurchase option on unvested restricted stock exercisable upon the voluntary or involuntary termination of the purchaser’s employment with the Company for any reason. The Company’s repurchase right lapses in accordance with the vesting terms. Options outstanding under the 2018 Plan will remain outstanding until they are exercised, canceled or expire. Through December 31, 2023, there have been 1,579 exercises of common stock options prior to the vesting of such options.

In May 2023, the Company adopted the 2023 Equity Incentive Plan (“2023 Plan”) under which the Company may issue stock options to purchase shares of common stock, award restricted stock, restricted stock units (“RSU”), dividend equivalents, stock appreciation rights, and other stock-based or cash-based awards to employees, Directors and consultants.

Through December 31, 2023, the Company has granted 1,230,318 options to purchase shares of common stock and 955,721 RSU’s under the 2023 plan. The options generally vest over a four-year period, following the date of grant, with 25% vesting on the first anniversary of the grant date and the remaining vesting in equal monthly installments thereafter. The RSU’s generally vest over a three-year period, following the date of grant, with a third of the award vesting on each year on the annual anniversary of the grant date. Through December 31, 2023, there have been no options or RSU’s under the 2023 plan that have vested and there have been no exercises of any options.

Collectively, the 2008 Stock Plan, 2018 Stock Plan and the 2023 Equity Incentive Plan are referred to as “the Plans”. The Company has authorized 10,797,927 shares of common stock to be issued under the Plans. The Company has reserved 4,769,377 shares of common stock for future issuance under the Plans.

The Company measures stock-based awards (stock options and RSU's), at their grant-date fair value and records compensation expense on a straight-line basis over the requisite service period, which is typically the vesting period, for the entire award. The Company recorded stock-based compensation expense in the following expense categories in its accompanying consolidated statements of operations and comprehensive loss:

	Year Ended December 31,	
(in thousands)	**2023**	**2022**
Research and development	$ 648	$ 154
Sales and marketing	1,387	318
Cost of sales	125	65
General and administrative	1,648	276
Total stock-based compensation[(1)]	$ 3,808	$ 813

(1) A portion of the stock-based compensation in the table above pertains to Incentive Stock Options, which are nondeductible and the balance that is related to stock-based compensation is offset by valuation allowance. Therefore, we have excluded the income tax effect associated with the stock-based compensation in the calculation above.

Stock Options

The following table summarizes stock option activity for the Plans for the year ended December 31, 2023:

	Number of shares	Weighted average exercise price per share	Weighted average remaining contractual term (years)	Aggregate intrinsic value (in 000's)
Outstanding at December 31, 2022	4,269,402	$ 1.07	6.07	
Granted	1,549,314	$ 10.29		
Exercised	(433,915)	$ 0.47		
Forfeited/expired	(512,274)	$ 5.12		
Outstanding at December 31, 2023	4,872,527	$ 3.64	6.10	$ 3,938
Exercisable at December 31, 2023	2,780,985	$ 0.89	4.15	$ 3,604
Vested and expected to vest at December 31, 2023	4,872,527	$ 3.64	6.10	

The shares of the Company's stock options prior to the Business Combination (as defined in Note 1) have been retroactively restated to reflect the exchange ratio of approximately 0.233335 established in the Business Combination as described in Note 3.

As of December 31, 2023, the total unrecognized compensation expense related to unvested stock option awards was $9.6 million, which the Company expects to recognize over a weighted-average period of 3.2 years.

The fair value of options is estimated using the Black-Scholes option pricing model, which takes into account inputs such as the exercise price, the value of the underlying common stock at the grant date, expected term, expected volatility, risk-free interest rate and dividend yield. The fair value of each grant of options was determined using the methods and assumptions discussed below.

- Fair value of the underlying common stock: For the year ended December 31, 2022 and until the Closing Date, due to the absence of a public market for Legacy Tigo Energy common stock, the Company's Board of Directors were required to periodically estimate the fair value of the Company's common stock considering, among other things, contemporaneous valuations of its common stock prepared by an unrelated third-party valuation firm in accordance with the guidance provided by the American Institute of Certified Public Accountants 2013 Practice Aid, Valuation of Privately-Held-Company Equity Securities Issued as Compensation.
- The expected term of employee options with service-based vesting is determined using the "simplified" method, as prescribed in the U.S. Securities and Exchange Commission's Staff Accounting Bulletin ("SAB") No. 107, whereby the expected life equals the arithmetic average of the vesting term and the original contractual term of the option due to the Company's lack of sufficient historical data. The expected term of non-employee options is equal to the contractual term.
- The expected volatility is based on historical volatilities of similar entities within the Company's industry which were commensurate with the expected term assumption as described in SAB No. 107.
- The risk-free interest rate is based on the interest rate payable on U.S. Treasury securities in effect at the time of grant for a period that is commensurate with the assumed expected term.
- The expected dividend yield is 0% because the Company has not historically paid and does not expect for the foreseeable future to pay a dividend on its common stock.

The fair value of each stock option was estimated on the date of grant using the weighted average assumptions in the table below:

	December 31, 2023	December 31, 2022
Expected volatility	68.1 %	71.8 %
Risk-free interest rate	4.1 %	3.3 %
Expected term (in years)	6.0	6.0
Expected dividend yield	— %	— %

Restricted Stock Units

The following table summarizes RSU activity for the Plans for the year ended December 31, 2023:

	Number of shares	Weighted average grant date fair value per share
Outstanding at December 31, 2022	—	$ —
Granted	955,721	$ 11.25
Vested	—	$ —
Forfeited/expired	(83,684)	$ 11.07
Outstanding at December 31, 2023	872,037	$ 11.27

As of December 31, 2023, the total unrecognized compensation expense related to unvested RSU's was $8.3 million, which the Company expects to recognize over a weighted-average period of 2.5 years.

13. Leases

As a lessee, the Company currently leases office space and vehicles in the United States, Italy, Israel, China, Philippines and Thailand. All of the Company's leases are classified as operating leases. The Company has no leases classified as finance or sales-type leases. For leases with terms greater than 12 months, the Company records the related assets and obligation at the present value of lease payments over the term. A portion of the Company's leases include rental escalation clauses, renewal options and/or termination options that are factored into the Company's determination of lease payments.

When available, the Company uses the rate implicit in the lease to discount lease payments to present value; however, most of its leases do not provide a readily determinable implicit rate. Therefore, the Company must estimate its incremental borrowing rate to discount the lease payments based on information available at lease commencement. The majority of the Company's leases have remaining lease terms of one to seven years, some of which include options to extend the leases for up to eight years, and some of which include options to terminate the leases within one year.

The components of lease expense are as follows (in thousands):

	Year Ended December 31,	
(in thousands)	**2023**	**2022**
Operating lease costs	$ 1,127	$ 614
Variable lease costs	395	277
Total lease cost	$ 1,522	$ 891

Other information related to leases was as follows:

	Year Ended December 31,	
Supplemental Cash Flows Information (in thousands)	**2023**	**2022**
Operating lease right of use assets obtained in exchange for operating lease liabilities [(1)]	$ 2,247	$ 1,787
Cash paid for amounts included in the measurement of lease liabilities	$ 1,087	$ 637

(1) The amount for the year ended December 31, 2022 includes approximately $1.5 million of ROU assets obtained in exchange for existing lease obligations due to the adoption of ASC Topic 842 and approximately $0.3 million of additional ROU assets obtained during the year.

	December 31, 2023	December 31, 2022
Weighted average remaining lease term (years)	2.9	2.7
Weighted average discount rate	8.5 %	5.4 %

Future maturities of lease liabilities were as follows as of December 31, 2023:

(in thousands)		Operating Leases
2024	$	1,306
2025		580
2026		413
2027		345
2028		136
Thereafter		9
Total future minimum lease payments	$	2,789
Less: imputed interest		205
Present value of lease liabilities	$	2,584

14. Goodwill and Intangible Assets

As of December 31, 2023, the Company had a goodwill balance of $12.2 million. The goodwill balance is related to the acquisition of fSight, refer to “Note 4” for further information.

The Company’s intangible assets by major asset class are as follows:

	December 31, 2023						
(in thousands, except for useful life amounts)	Weighted Average Useful Life (Years)		Gross		Accumulated Amortization		Net Book Value
Amortizing:							
Patents	6.7	$	450	$	(65)	$	385
Customer relationships	10.0		170		(16)		154
Developed technology	10.0		1,820		(167)		1,653
Total intangible assets		$	2,440	$	(248)	$	2,192

As of December 31, 2022, the Company did not have any intangible assets.

The Company recognized amortization expense related to acquired intangible assets of $0.2 million for the year ended December 31, 2023. There was no amortization expense recorded for the year ended December 31, 2022. Amortization expense is included in general and administrative expenses in the consolidated statements of operations and comprehensive loss.

Amortization expense related to intangible assets at December 31, 2023 in each of the next five years and beyond is expected to be incurred as follows (in thousands):

(in thousands)	Amount
2024	$ 270
2025	270
2026	270
2027	262
2028	260
Thereafter	860
	$ 2,192

15. Income Taxes

The domestic and foreign components of income before income taxes consisted of the following (in thousands):

	Years Ended December 31	
	2023	2022
United States	$ 567	$ (7,179)
Foreign	(1,413)	213
Income before income taxes	$ (846)	$ (6,966)

The income taxes provision for (benefit from) the years presented is as follows (in thousands):

	Years Ended December 31	
	2023	2022
Current:		
Federal	$ —	$ —
State	—	—
Foreign	159	71
	$ 159	$ 71
Deferred:		
Federal	$ —	$ —
State	—	—
Foreign	(21)	—
	$ (21)	$ —
Income taxes provision for	$ 138	$ 71

The reconciliation of the provision computed at the federal statutory rate to the Company's provision (benefit) for income taxes was as follows:

	Years Ended December 31	
	2023	2022
Tax at federal statutory rate	21.0 %	21.0 %
State tax, net of federal benefit	22.9 %	1.6 %
Mark to market adjustment	— %	(3.1)%
Research and development tax credits	32.4 %	2.4 %
Global intangible low taxed income	(17.1)%	— %
Foreign rate differential	6.0 %	(0.3)%
Transaction costs	(109.1)%	— %
Stock based compensation	(31.4)%	(1.2)%
Foreign tax and other	(17.4)%	(0.1)%
Deferred tax adjustments	316.2 %	— %
Change in valuation allowance	(239.7)%	(21.3)%
Total	(16.2)%	(1.0)%

During the years ended December 31, 2023 and 2022, the Company recorded total income tax expense of $0.1 million and $0.1 million, respectively, primarily related to foreign earnings.

A summary of significant components of the Company's deferred tax assets and liabilities as of December 31, 2023 and 2022, is as follows:

	Years Ended December 31,	
	2023	2022
Deferred tax assets:		
Net operating loss carryforwards	$ 19,968	$ 17,360
Research and development tax credits	3,029	2,157
Stock based compensation	399	246
Capitalized research costs	2,491	1,338
Lease liability	545	299
Reserves and accruals	2,773	1,535
Other	54	—
Total deferred tax assets	29,259	22,935
Less: valuation allowance	(24,281)	(22,608)
Total deferred tax assets, net of valuation allowance	4,978	327
Deferred tax liabilities:		
Fixed assets and intangibles	(447)	(50)
Right of use leased assets	(528)	(277)
Debt Discount	(3,982)	-
Total deferred tax liabilities	(4,957)	(327)
Net deferred tax assets	$ 21	$ —

The Company assesses the realizability of deferred tax assets based on the available evidence, including a history of taxable income and estimates of future taxable income. In assessing the realizability of deferred tax assets, the Company considers whether it is more likely than not that all or some portion of deferred tax assets will not be realized. Due to the history of losses incurred by the Company, management believes it is not more likely than not that substantially all of the U.S. federal, state and certain foreign deferred tax assets can be realized. Accordingly, the Company established and recorded a full valuation allowance on its U.S. domestic and certain foreign net deferred tax assets of $24.3 million and $22.6 million as of December 31, 2023 and 2022, respectively. The valuation allowance increased by $1.7 million during the year ended December 31, 2023, and increased by $1.5 million during the year ended December 31, 2022.

No deferred tax liabilities have been recorded relating to the earnings of the Company's foreign subsidiaries since all such earnings are intended to be indefinitely reinvested. The amount of the unrecognized deferred tax liability associated with these earnings is immaterial.

Utilization of the net operating loss and tax credit carryforwards is subject to a substantial annual limitation due to the "ownership change" limitations provided by Sections 382 and 383 of the Internal Revenue Code of 1986, as amended ("IRC") and other similar state provisions. Any annual limitation may result in the expiration of net operating loss and tax credit carryforwards before utilization. As of December 31, 2023, the Company had $62.4 million of U.S. federal net operating loss carryforwards available to reduce future taxable income, of which $27.7 million will be carried forward indefinitely for U.S. federal tax purposes and $34.7 million will expire beginning in 2028. The Company also has $55.2 million of U.S. state net operating loss carryforwards that will expire beginning in 2028. The Company also has $13.1 million of foreign net operating loss carryforwards that do not expire.

The Company also has federal and state research and development ("R&D") and other tax credit carryforwards of $2.4 million and $2.4 million, respectively, as of December 31, 2023. The federal credit carryforwards will begin expiring in 2024 and state research credit carryforwards do not expire.

Under the Tax Cuts and Jobs Act ("TCJA"), for tax years beginning after December 31, 2021, taxpayers are required to capitalize and amortize all R&D expenditures that are paid or incurred in connection with their trade or business which represent costs in the experimental or laboratory sense. Specifically, costs for U.S.-based R&D activities must be amortized over 5 years and costs for foreign R&D activities must be amortized over 15 years. As of December 31, 2023, there is limited Internal Revenue Service guidance on how to treat capitalizable R&D expenditures. The Company will continue to monitor the status of any new guidance that might be issued and will update its estimated capitalized R&D, accordingly.

A reconciliation of the beginning and ending amount of gross unrecognized tax benefits is as follows (in thousands):

	Years Ended December 31,	
	2023	2022
Balance at beginning of year	$ 952	$ 819
Gross increases to prior year tax positions	250	—
Gross increases to current year tax positions	179	133
Balance at end of year	$ 1,381	$ 952

At December 31, 2023 and 2022, the balance of gross unrecognized tax benefits was $1.4 million and $1.0 million, respectively. For each of the years ended December 31, 2023 and 2022, the balance of gross unrecognized tax benefits increased $0.4 million and $0.1 million, respectively, related to research and development income tax credits claimed. None of the Company's unrecognized tax benefits would, if recognized, reduce the Company's effective tax rate since the tax benefits would increase a deferred tax asset that is currently offset by a full valuation allowance. The Company does not anticipate a significant change to the total amount of unrecognized tax benefits within the next twelve months.

The Company files income tax returns in the U.S. federal, California and other various state and international jurisdictions. Tax regulations within each jurisdiction are subject to the interpretation of the related tax laws and regulations and require significant judgment to apply. Carryover attributes beginning in 2008 remain open to adjustment by the U.S. and state authorities. The U.S. federal, state, and foreign jurisdictions have statutes of limitations that generally range from three to five years. As of December 31, 2023, there were no ongoing examinations.

The Company recognizes any interest and/or penalties related to income tax matters as a component of income tax expense. As of December 31, 2023, there were no accrued interest and penalties related to uncertain tax positions.

16. Segment and Geographic Information

The Chief Executive Officer was identified as the CODM and is ultimately responsible for and actively involved in the allocation of resources and the assessment of the Company's performance. The CEO reviews financial information presented on a consolidated basis. The Company has one business activity — the design, development and sale of solar energy optimization solutions. Therefore, management has determined that the Company has a single operating and reportable segment.

Long-lived assets

The following table presents the Company's long-lived assets, which consists of tangible property and equipment, net of depreciation, and operating ROU assets, by geographic region (in thousands):

Long-lived assets		**December 31, 2023**		**December 31, 2022**
EMEA	$	1,770	$	516
Americas		1,384		1,012
APAC		2,807		1,376
Total long-lived assets	$	5,961	$	2,904

17. Related Party Transactions

Note Receivable from Related Parties and Related Party Payable

In December 2022, the Company executed payment and release letters to the CEO and former directors to forgive the remaining balance of the recourse promissory notes and associated interest in connection with the adoption of the 2013 Officers and Directors Plan. The amount forgiven totaled $0.1 million. In addition, the Company agreed to make an additional payment of $0.2 million for services rendered. As a result of the payment for services rendered, the Company recorded $0.2 million in general and administrative expenses in the accompanying consolidated statement of operations for the year ended December 31, 2022. As of December 31, 2022, there was no remaining principal balance on the recourse promissory notes.

18. Subsequent Events

The Company evaluated subsequent events and transactions that occurred after the balance sheet date up to the date that the consolidated financial statements were issued. Based upon this review, other than as described below, the Company did not identify any subsequent events that would have required adjustment or disclosure in the consolidated financial statements.

On January 25, 2024, consistent with the terms of the purchase agreement related to the acquisition of fSight, the Company issued 166,271 shares of its Common Stock as the first tranche of Contingent Shares to certain former equity holders of fSight. These shares were scheduled for release in two tranches, at 12 months and 18 months post-Acquisition Closing Date, subject to adjustment pursuant to the terms of the purchase agreement. This issuance represented the completion of the 12-month release condition. The fair value of these shares, at the time of release, was approximately $0.2 million, based on the prevailing market price of the Company’s Common Stock on January 25, 2024. The remaining Contingent Shares will be issued 18 months following the Acquisition Closing Date. See Note 4, “Acquisition of Foresight Energy, Ltd.,” of the notes to the consolidated financial statements for additional information.

Item 9. Changes in and Disagreements With Accountants on Accounting and Financial Disclosure.

None.

Item 9A. Controls and Procedures.

Evaluation of Disclosure Controls and Procedures

Under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, we conducted an evaluation of the effectiveness of the design and operation of our disclosure controls and procedures as of December 31, 2023, as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended (the "Exchange Act"). Based on this evaluation, our Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls were effective as of December 31, 2023.

Disclosure controls and procedures are controls and other procedures that are designed to ensure that information required to be disclosed in our reports filed or submitted under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the SEC's rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed in our reports filed under the Exchange Act is accumulated and communicated to management, including our Chief Executive Officer and Chief Financial Officer, to allow timely decisions regarding required disclosure.

Remediation of Previously Reported Material Weakness

As discussed elsewhere in this Annual Report on Form 10-K, the Company completed the Merger on May 23, 2023. Prior to the Merger, Roth CH Acquisition IV Co. initially disclosed in Part I, Item 4 of its Form 10-Q for the fiscal period ended September 30, 2021 filed on November 18, 2021 a material weakness in internal controls over financial reporting related to the accounting for complex financial instruments. Following the Merger, Management improved our internal processes of evaluating and implementing the accounting standards that apply to our financial statements and enhanced our accounting team through the hiring of a Corporate Controller. We also engaged a globally recognized third-party accounting firm to assist with the evaluation and documentation of accounting for complex financial instruments. In addition, we provided accounting and finance personnel with additional enhanced accounting literature and research tools in order to assist with their review and evaluation of the accounting for complex financial instruments. Management monitored the improvements made to our overall control environment, and based upon this evaluation, were able to determine that the material weakness has been fully remediated as of December 31, 2023.

Management's Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting. Internal control over financial reporting is defined in Rules 13a-15(f) and 15d-15(f) promulgated under the Exchange Act as a process designed by, or under the supervision of, a company's principal executive and principal financial officers and effected by the Company's board of directors, management and other personnel, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with U.S. GAAP.

As discussed elsewhere in this Annual Report, we completed the Business Combination on May 23, 2023. Prior to the Business Combination, we were a special purpose acquisition company formed for the purpose of effecting a merger, capital stock exchange, asset acquisition, stock purchase, reorganization or other similar business combination with one or more operating businesses. As a result, previously existing internal controls are no longer applicable or comprehensive enough as of the assessment date as our operations prior to the Business Combination were insignificant compared to those of the consolidated entity post-Business Combination. The design of internal controls over financial reporting for the Company post-Business Combination has required and will continue to require significant time and resources from management and other personnel. As a result, management was unable, without incurring unreasonable effort or expense, to conduct an assessment of our internal control over financial reporting as of December 31, 2023. 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.

Changes in Internal Control over Financial Reporting

As described above, we took steps to remediate a material weakness in our internal control over financial reporting described in "Remediation of Previously Reported Material Weakness." Other than the efforts that we conducted to remediate the material weakness discussed above, there were no changes in our internal control over financial reporting identified in connection with the evaluation required by Rules 13a-15(d) and 15d-15(d) of the Exchange Act that occurred during the three months ended December 31, 2023, that have materially affected, or 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 will be set forth in our definitive proxy statement for our 2024 Annual Meeting of Stockholders (the "Proxy Statement") and is incorporated herein by reference.

Item 11. Executive Compensation.

The information required by this Item will be set forth in the Proxy Statement and is incorporated herein by reference.

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

The information required by this Item will be set forth in the Proxy Statement and is incorporated herein by reference.

Item 13. Certain Relationships and Related Transactions, and Director Independence.

The information required by this Item will be set forth in the Proxy Statement and is incorporated herein by reference.

Item 14. Principal Accountant Fees and Services.

The information required by this Item will be set forth in the Proxy Statement and is incorporated herein by reference.

PART IV

Item 15. Exhibits and Financial Statement Schedules

a) Financial Statements and Schedules: The required information is set forth in "Part 2, Item 8 – Financial Statements and Supplementary Data" in this Annual Report.

b) Exhibits: The following exhibits are filed or furnished as an exhibit to this Annual Report on Form 10-K.

Exhibit No.	Description
2.1**	Merger Agreement, by and among Roth CH Acquisition IV Co., Tigo Energy, Inc. and Roth IV Merger Sub Inc., dated as of December 5, 2022 (incorporated by reference to Exhibit 2.1 to the Company's Current Report on Form 8-K, filed with the SEC on December 6, 2022).
2.2	Amendment No. 1 to Merger Agreement by and among Roth CH Acquisition IV Co., Tigo Energy, Inc. and Roth IV Merger Sub Inc., dated as of April 6, 2023 (incorporated by reference to Exhibit 2.2 to the Company's Registration Statement on S-4/A (File No. 333-264811), filed with the SEC on April 20, 2023).
3.1	Second Amended and Restated Certificate of Incorporation of Tigo Energy, Inc. (incorporated by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K, filed with the SEC on May 30, 2023).
3.2	Amended and Restated Bylaws of Tigo Energy, Inc. (incorporated by reference to Exhibit 3.2 to the Company's Current Report on Form 8-K, filed with the SEC on May 30, 2023).
4.1	Specimen Common Stock Certificate (incorporated by reference to Exhibit 4.2 to the Company's Registration Statement on S-4/A (File No. 333-264811), filed with the SEC on April 20, 2023).
4.2†	Description of Securities.
10.1	Form of Indemnification Agreement (incorporated by reference to Exhibit 10.22 to the Company's Registration Statement on S-4/A (File No. 333-264811), filed with the SEC on April 20, 2023).
10.2	Amended and Restated Registration Rights Agreement, dated as of May 23, 2023, by and among Tigo Energy, Inc., CHLM Sponsor LLC, CR Financial Holdings, Inc., and each party listed under Holder on the signature pages thereto (incorporated by reference to Exhibit 10.2 the Company's Current Report on Form 8-K, filed with the SEC on May 30, 2023).
10.3†	Form of Lock-Up Agreement
10.4+	2023 Equity Incentive Plan of Tigo Energy, Inc. (incorporated by reference to Exhibit 10.4 the Company's Current Report on Form 8-K, filed with the SEC on May 30, 2023).
10.5	Promissory Note, dated as of December 5, 2022 (incorporated by reference to Exhibit 10.6 to the Company's Current Report on Form 8-K, filed with the SEC on December 6, 2022).
10.6	2008 Stock Plan of Tigo Energy, Inc. (incorporated by reference to Exhibit 10.18 to the Company's Registration Statement on S-4/A (File No. 333-264811), filed with the SEC on April 20, 2023).
10.7+	2013 Officers and Directors Stock Plan Tigo Energy, Inc. (incorporated by reference to Exhibit 10.20 to the Company's Registration Statement on S-4/A (File No. 333-264811), filed with the SEC on April 20, 2023).
10.8+	Amended and Restated 2018 Stock Plan of Tigo Energy, Inc. (incorporated by reference to Exhibit 10.21 to the Company's Registration Statement on S-4/A (File No. 333-264811), filed with the SEC on April 20, 2023).
10.9+	Employment Agreement, by and between Zvi Alon and Tigo Energy, Inc. (incorporated by reference to Exhibit 10.23 to the Company's Registration Statement on S-4/A (File No. 333-264811), filed with the SEC on April 20, 2023).
10.10+	Employment Agreement, by and between Bill Roeschlein and Tigo Energy, Inc. (incorporated by reference to Exhibit 10.24 to the Company's Registration Statement on S-4/A (File No. 333-264811), filed with the SEC on April 20, 2023).

10.11	Convertible Promissory Note Purchase Agreement, dated as of January 9, 2023, by and among Tigo Energy, Inc. and the purchasers identified therein (incorporated by reference to Exhibit 10.25 to the Company's Registration Statement on S-4/A (File No. 333-264811), filed with the SEC on April 20, 2023).
10.12	Convertible Promissory Note, dated as of January 9, 2023 (incorporated by reference to Exhibit 10.26 to the Company's Registration Statement on S-4/A (File No. 333-264811), filed with the SEC on April 20, 2023).
10.13+	Fiscal 2023 Executive Short Term Incentive Plan (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K, filed with the SEC on June 12, 2023).
10.14+	Form of Restricted Stock Unit Award Grant Notice (incorporated by reference to Exhibit 4.8 to the Company's Registration Statement on Form S-8 (File No. 333-273897), filed with the SEC on August 10, 2023).
10.15+	Form of Stock Option Grant Notice (incorporated by reference to Exhibit 4.9 to the Company's Registration Statement on Form S-8 (File No. 333-273897), filed with the SEC on August 10, 2023).
10.16+	Form of Non-Employee Director Restricted Stock Unit Award Agreement (incorporated by reference to Exhibit 4.10 to the Company's Registration Statement on Form S-8 (File No. 333-273897), filed with the SEC on August 10, 2023).
10.17+	Form of Stock Appreciation Right Award Agreement for China Grantees (incorporated by reference to Exhibit 4.11 to the Company's Registration Statement on Form S-8 (File No. 333-273897), filed with the SEC on August 10, 2023).
10.18+	Form of Stock Option Grant Notice for Israeli Participants (incorporated by reference to Exhibit 4.12 to the Company's Registration Statement on Form S-8 (File No. 333-273897), filed with the SEC on August 10, 2023).
10.19+	Tigo Energy, Inc. Independent Director Compensation Policy (incorporated by reference to Exhibit 10.8 to the Company's Quarterly Report on Form 10-Q for the quarterly period ended June 30, 2023, filed with the SEC on August 11, 2023).
10.20	Amendment to Convertible Promissory Note Purchase Agreement and Convertible Promissory Note, dated as of September 24, 2023, by and between Tigo Energy, Inc. and L1 Energy Capital Management S.à.r.l. (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the quarterly period ended September 30, 2023, filed with the SEC on November 7, 2023).
10.21+	Israeli Participants Sub-Plan to the Tigo Energy, Inc. 2023 Incentive Plan (incorporated by reference to Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q for the quarterly period ended September 30, 2023, filed with the SEC on November 7, 2023).
10.22†+	Offer Letter of Employment, by and between Jeffrey Sullivan and Tigo Energy, Inc.
16.1	Letter from Marcum LLP to the Securities and Exchange Commission (incorporated by reference to Exhibit 16.1 to the Company's Current Report on Form 8-K, filed with the SEC on June 30, 2023).
21.1†	Subsidiaries of Tigo Energy, Inc.
23.1†	Consent of Frank, Rimerman + Co. LLP.
23.2†	Consent of Deloitte & Touche LLP.
24.1†	Power of Attorney (included on the signature page to this Annual Report).
31.1†	Certification of Chief Executive Officer pursuant to Rule 13a-14(a)/15d-14(a).
31.2†	Certification of Chief Financial Officer pursuant to Rule 13a-14(a)/15d-14(a).
32.1*	Certification of Chief Executive Officer pursuant to Rule 13a-14(b)/15d-14(b).
32.2*	Certification of Chief Financial Officer pursuant to Rule 13a-14(b)/15d-14(b).
97.1†	Policy for the Recovery of Erroneously Awarded Compensation.
101.INS†	Inline XBRL Instance Document – the instance document does not appear in the Interactive Data File because XBRL tags are embedded within the Inline XBRL document
101.SCH†	Inline XBRL Taxonomy Extension Schema With Embedded Linkbase Documents

104	Cover Page Interactive Data File (embedded within the Inline XBRL document)

† Filed herewith.
* Furnished herewith

+	Indicates management contract or compensatory plan.
**	Annexes, schedules and exhibits to this Exhibit omitted pursuant to Item 601(a)(5) of Regulation S-K. The Registrant agrees to furnish supplementally a copy of any omitted schedule or exhibit to the SEC upon request.

Item 16. Form 10-K Summary

None.

SIGNATURES

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

	Tigo Energy, Inc.
Date: March 21, 2024	
By:	/s/ Zvi Alon
Name:	**Zvi Alon**
Title:	Chief Executive Officer and Director (Principal Executive Officer)

POWER OF ATTORNEY

Each person whose signature appears below constitutes and appoints each of Zvi Alon and Bill Roeschlein, acting alone or together with another attorney-in-fact, as his or her true and lawful attorney-in-fact and agent, with full power of substitution and resubstitution, for such person and in his or her name, place and stead, in any and all capacities, to sign any or all amendments to this report, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorney-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as he might or could do in person, hereby ratifying and confirming all that said attorney-in-fact and agent, or his or her substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Exchange Act, this report has been signed by the following persons on behalf of the registrant and in the capacities on the dates indicated.

Name	Title	Date
/s/ Zvi Alon **Zvi Alon**	Chief Executive Officer and Director (Principal Executive Officer)	March 21, 2024
/s/ Bill Roeschlein **Bill Roeschlein**	Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer)	March 21, 2024
/s/ Tomer Babai **Tomer Babai**	Director	March 21, 2024
/s/ Joan C. Conley **Joan C. Conley**	Director	March 21, 2024
/s/ Sagit Manor **Sagit Manor**	Director	March 21, 2024
/s/ Michael Splinter **Michael Splinter**	Director	March 21, 2024
/s/ Stanley Stern **Stanley Stern**	Director	March 21, 2024
/s/ John Wilson **John Wilson**	Director	March 21, 2024